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ACTION AGAINST NATIONAL AND TRANSNATIONAL ECONOMIC AND ORGANIZED CRIME, AND THE ROLE OF CRIMINAL LAW IN THE PROTECTION OF THE ENVIRONMENT: NATIONAL EXPERIENCES AND INTERNATIONAL COOPERATION

Background paper for the workshop on environmental protection at the national and international levels: potentials and limits of criminal justice

Summary

Over the years, the international community has become more and more alarmed by environmental damage and technological disasters, which have tended to become more destructive, affecting ever larger concentrations of population. International responses are primarily directed at relief action, but it is increasingly being realized that the actual and potential consequences of such disasters are so serious, and so global in scale, that much greater emphasis should be given to the prevention of environmental damage. Accordingly, the role of criminal justice in the protection of the environment is becoming more important. Furthermore, the consequences of some environmental disasters have gone far beyond national borders, underlining the international implications of such events. The Economic and Social Council, in its resolution 1992/22, section VI, determined that the role of criminal law in the protection of the environment should be included as part of one of the priority themes to guide the work of the Commission on Crime Prevention and Criminal Justice for the period 1992-1996. In its resolution 1993/32, the Council endorsed the programme of work for the Ninth United Nations Congress on the Prevention of Crime and the Treatment of Offenders, including the holding of, *inter alia*, a two-day workshop on environmental protection at the national and international levels: potentials and limits of criminal justice. The purpose of the present paper is to introduce the topic from a comparative and international point of view by presenting the results of an empirical study specifically developed for the workshop. The study, which covered 11 developing and developed countries, involved case-studies of criminal justice responses to (a) transboundary pollution, (b) the considerable environmental damage caused by the operation of large-scale enterprises involving inadequate risk management and (c) polluting behaviours resulting from everyday activities of small-scale enterprises, businesses or individuals. A wide range of proposals for projects enhancing international cooperation in the fields of technical assistance, research, training, advisory services and education are also provided in the present paper.

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INTRODUCTION

1. The General Assembly, in its resolution 45/121, welcomed the instruments and resolutions adopted by the Eighth United Nations Congress on the Prevention of Crime and the Treatment of Offenders.[1] The Eighth Congress, in its resolution entitled "The role of criminal law in the protection of nature and the environment",[2] called on Member States, *inter alia*, to recognize the need to modify or enact, where necessary, and to enforce national criminal laws designed to protect nature and the environment. It also requested Member States, *inter alia*, to encourage the harmonization of national regional legislation of countries belonging to the same ecosystem and to cooperate in the prevention, investigation and prosecution of criminal acts against the environment.

2. On the recommendation of the Commission on Crime Prevention and Criminal Justice at its first session, the Economic and Social Council adopted resolution 1992/22. In section VI of that resolution, it determined that national and transnational crime, organized crime, economic crime, including money-laundering, and the role of criminal law in the protection of the environment should be one of the priority themes to guide the work of the Commission for the period 1992-1996. On the recommendation of the Commission at its second session, the Council adopted resolution 1993/32, in which it approved the provisional agenda for the Ninth United Nations Congress on the Prevention of Crime and the Treatment of Offenders, including as item 5 of the provisional agenda "Action against national and transnational economic and organized crime, and the role of criminal law in the protection of the environment: national experiences and international cooperation". Furthermore, in the same resolution, the Council endorsed the programme of work for the Ninth Congress, including the holding of a two-day workshop on environmental protection at the national and international levels: potentials and limits of criminal justice. The role of criminal law in the protection of the environment was also the subject of Council resolutions 1993/28 and 1994/15. In its resolution 1993/28, the Council requested the Secretary-General to include environmental crime as an issue for technical cooperation. In its resolution 1994/15, the Council invited Member States and relevant bodies to consider the recommendations concerning the role of criminal law in protecting the environment, made by the Ad Hoc Expert Group on More Effective Forms of International Cooperation against Transnational Crime, including Environmental Crime, held at Vienna from 7 to 10 December 1993.

3. The United Nations Interregional Crime and Justice Research Institute (UNICRI) is organizing the workshop, in cooperation with the European Institute for Crime Prevention and Control, affiliated with the United Nations,* the Asia and Far East Institute for the Prevention of Crime and the Treatment of Offenders, the Australian Institute of Criminology and the International Scientific and Professional Advisory Council and in collaboration with the Milan-based Istituto per l'Ambiento, the International Centre for Criminal Law Reform and Criminal Justice Policy and the Max Planck Institute for Foreign and International Criminal Law. Other institutes of the United Nations crime prevention and criminal justice programme network were consulted. A working group was created to develop the project methodology and to coordinate the preparatory work.

4. Considerable work has been done in this area by the workshop organizers** and many other institutions. Research on the use of criminal law in environmental protection has also been carried out, as evidenced by the extensive literature on the subject, especially in developed countries.[3] Examples of research projects by UNICRI and the Australian Institute of Criminology, the European Institute for Crime Prevention and Control and the Max Planck Institute will be available to participants in the workshop.[4]

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*Formally called the Helsinki Institute for Crime Prevention and Control, affiliated with the United Nations (HEUNI).

**For further information and bibliographical references, see United Nations Interregional Crime and Justice Research Institute, *Environmental Protection at National and International Levels: Potentials and Limits of Criminal Justice: Case Studies*, forthcoming.

5. The workshop has three main objectives:

(a) To provide information about the responses to pollution incidents in different countries and in different legal systems (presentation and discussion of existing measures; presentation and discussion of national case-studies);

(b) To promote research into the different strategies and effects thereof on the prevention and reaction to environmentally harmful or threatening behaviours (presentation and discussion of "research software");

(c) To discuss selected issues in the realm of criminal justice response from a comparative perspective and with a view to facilitating international cooperation (expert panel; examination of guiding principles in respect of developing research and international strategies in this field).

6. The results of an empirical study carried out specifically for the workshop will be presented, covering 11 developing and developed countries and including case-studies on criminal justice responses to (a) transboundary pollution; (b) the considerable environmental damage caused by the operation of large-scale enterprises involving inadequate risk management; and (c) polluting behaviours resulting from everyday activities of small-scale enterprises, businesses or individuals. In addition, during the workshop an expert panel will discuss the topic "Environmental protection through criminal law: limits of individual responsibility - potentials of collective liability?".

7. The 11 countries participating in the empirical study were Australia, Brazil, Canada, China, Germany, Italy, Japan, Nigeria, Poland, Sweden and Tunisia.* In each country, with the assistance of the collaborating institutes of the United Nations crime prevention and criminal justice programme network, an expert was chosen to carry out the fieldwork. The working group developed guidelines for data collection for the experts.[5]

8. In order to provide information on the way specific systems for environmental protection work, each expert was requested to provide three examples of each of the three categories of pollution described. The experts also collected information from prosecutorial, administrative and environmental agencies and environmental groups and movements (Greenpeace, Friends of the Earth etc.). In addition, for ongoing cases, other sources of information were newspapers and specialized journals. The complete set of case-studies from the 11 countries involved will be available to workshop participants.[6]

I. SUBSTANTIVE BACKGROUND

9. Over the years, the international community has become increasingly alarmed by environmental damage and technological disasters, which have tended to become more destructive, affecting ever larger concentrations of population. International responses are primarily directed at relief action, but it is increasingly being realized that the actual and potential consequences of such disasters have become so serious, and so global in scale, that much greater emphasis should be given to the prevention of environmental damage. Accordingly, the role of criminal justice in the protection of the environment is becoming more important. Furthermore, the consequences of some environmental disasters have gone far beyond national borders, underlining the international implications of such events.

10. The right to a healthy and safe environment was recognized in a number of United Nations and other international instruments and forums, such as the Universal Declaration of Human Rights (General Assembly

*In the present paper, specific references to those 11 countries are based on the data collected by the experts.

resolution 217 A (II)) and the United Nations Conference on the Human Environment, held at Stockholm from 5 to 16 June 1972. Similar concerns were also expressed in the International Covenant on Economic, Social and Cultural Rights (General Assembly resolution 2200 A (XXI), annex), in the report of the Experts Group on Environmental Law of the World Commission on Environment and Development[7] and in the report of the United Nations Conference on Environment and Development, held at Rio de Janeiro from 3 to 14 June 1992,[8] and have been entrenched in the constitutions of several countries.

A. The role of criminal law in environmental protection

11. Criminal law was one of the first mechanisms in many countries that directly, as well as indirectly, protected certain elements of the natural environment, such as air and water, although the objects of protection were human beings. It continues to play a role that varies in importance, depending on the jurisdiction. In many cases there has also been a move to introduce substantive criminal offences against the environment.

12. Some acts of pollution are so serious that they are considered to merit stigmatization as criminal; however, a mix of criminal, civil and administrative laws might be a more appropriate way to deal with the problem. One reason is that victims can usually institute civil proceedings but are not always empowered to institute criminal proceedings. Another reason is that frequently States themselves are the most significant polluters and state liability for criminal acts is not always recognized under international law.

13. A discussion of the role of criminal law in environmental protection must begin by defining environmental crime. To do that, the object of the protection must be defined. There is a certain level of agreement at the international level on the importance of defining (a) the environment as the scope of the protection, distinguishing it from property and public health or individual right to personal integrity; and (b) the components of the environment meriting protection.*

14. A "culture problem" might exist in dealing with environmental crime. Persons and bodies engaged in such activities tend not to be regarded as criminals in the traditional sense, although they usually are quite aware of the consequences of their actions. In this context, the term "crime against the environment" might be preferable to the term "environmental crime". This would be consistent with other criminal law concepts such as crimes against the person, crimes against property etc.

15. Criminal provisions devised to respond to environmentally harmful behaviour have to deal with the problem of drawing a clear and practically feasible line between crimes against the environment on the one hand and legitimate use of natural resources on the other. Efforts should be made to ensure sustainable utilization of natural resources in order to maintain a balance, for the sake of future generations.

16. The environmental consequences resulting from the recent conflict between Iraq and Kuwait demonstrate that States can seriously damage the environment by weapons of war, leading to a situation that may be irreversible or reversible only after a long period and at great expense. Declaring not only such aggressive acts, but also the deliberate dumping of hazardous chemical and radioactive wastes, or the scuttling of vessels carrying such cargo, to be international crimes and placing them on the same level as genocide would advance the international protection of the environment, benefiting both the present and future generations.

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*See, for example, Council of the European Communities directive 91/156/EEC, on waste (*Official Journal of the European Communities*, No. L 78, 26 March 1991, p. 32); see also F. Giampietro, "Models and types of environmental offences: preliminary considerations", *Criminal Law and the Environment*, H.-J. Albrecht and S. Leppä, eds. Publication Series No. 22 (Forssa, Finland, European Institute for Crime Prevention and Control, affiliated with the United Nations, 1992), pp. 142-151.

B. Limiting factors

17. The increased interest in using criminal law in environmental protection has brought about a serious debate on the appropriateness and effectiveness of criminal measures in preventing and redressing harm to the environment. One of the biggest concerns derives from the relationship between administrative and criminal law; it is feared that criminal law will be inflated, thereby diminishing its value since "both murder and mere disobedience of administrative orders are defined as criminal".[9] Similar concerns have been expressed about the danger of selective prosecution and lenient and inefficient sentencing practices, which can also lead to the derogation of criminal law. A further problem is the lack of strict standards in criminal law; while strict standards in administrative law make possible direct interaction between the administrative agency and the subject, criminal law without such standards is "soft" and will inevitably malfunction in this context unless appropriate corrections are made.

18. The high costs involved in using criminal law for environmental protection might also have a negative effect. Developing countries often lack resources needed to enforce criminal provisions. Poverty and environmental degradation, however, are closely interrelated. Environmental protection in developing countries must, in this context, be viewed as an integral part of development and cannot be considered separately from it.

19. Other weaknesses in the use of criminal law are the higher onus of proof required, the need to establish knowledge or intent, and the fact that in a number of jurisdictions it is not possible to convict corporations for criminal offences. Furthermore, the use of criminal law can also be a purely symbolic measure to show that "something has been done", in order to divert attention from ineffective environmental protection as a whole.

20. Evidential difficulties include establishing *mens rea*, proving pollution or deleterious effects, and linking the pollution, the substance and the polluter. Because of these obstacles, there has been a trend in some developed countries towards introducing devices that facilitate the attribution of criminal responsibility.[10]

21. In some Member States, strict liability has been used as a means of overcoming some of the difficulties associated with the use of criminal law. Strict liability operates irrespective of fault, although a defence of honest and reasonable mistake might be available. This might create problems, mostly because of the fact that one of the main purposes of criminal law is deterrence, and if criminal liability was assessed without fault there would be no deterrent effect.

22. The question of who is liable to be criminally sanctioned is also crucial. Natural persons may, of course, be subject to criminal sanctions. In some jurisdictions, legal persons, government entities and officials from environmental protection agencies may be criminally (as well as civilly) liable for environmental degradation resulting from breach of statutory duty. In most civil law countries, however, criminal liability cannot be assigned to legal persons. There have been some attempts to target corporations indirectly by penalizing responsible corporate employees. The different ways of dealing with harm done by corporations reflect a historical division between those societies where corporations have been liable to criminal sanctions and those where they have not been liable to such sanctions (i.e. those where the Roman law maxim *societas delinquere non potest* applies).[10]

23. Limitations can also be found in the use of criminal sanctions at the international level. Significant variations in national laws, coupled with the embryonic state of mutual assistance in criminal matters, severely inhibit the effective use of criminal law at this level. In addition, there is no comprehensive convention dealing with the environment and existing conventions deal only with certain aspects of damage to the environment.

24. An additional limitation to the effective use of criminal sanctions at the international level is the need in many countries either to pass domestic legislation or to undertake ratification procedures, in order to give effect to international obligations. Experience has shown that in many countries the process of transformation of international prescriptions into national law is very slow.*

C. Potentials

25. There are also advantages to utilizing criminal law. For example, the deterrent effect of exposure to conviction of a criminal offence can be perceived as greater than exposure to civil liability, particularly given the growing range of innovative sanctions that might be imposed.

26. Another strength of the use of criminal sanctions in relation to domestic conduct is that offences could be clearly defined in conformity with substantive and procedural domestic law, thereby ensuring compliance with the principle of legality. In addition, there is the possibility of domestic laws having extraterritorial application, and hence being capable of dealing with some transboundary conduct.

27. There are also good reasons for relying upon criminal law at the regional level, such as the likelihood of being able to reach an agreement on common definitions of the elements of the offences; the greater deterrent effect in relation to transborder conduct; the contribution towards achieving greater consistency in legal provisions; and the existence of regional arrangements for extradition and mutual assistance in criminal matters, which could contribute to effective investigation and prosecution.

D. Implementation

28. Typically, the penalty for an environmental offence is a fine and/or imprisonment. Fines are a traditional approach to penalizing environmental offenders. Recently, in some Member States, concern has been expressed about the inadequacy of maximum fines provided for in statutes and imposed by the judiciary. Where reform of environmental law has occurred, the fine continues to be at the centre of sanctioning frameworks.

29. Most Member States have predominantly used civil or administrative sanctions to encourage compliance with environmental legislation, since a broad scope of sanctions are commonly seen as more appropriate, as well as more effective and speedier than the traditional penal sanctions of fines and imprisonment. The concern over more and more serious cases involving pollution, however, has increased the interest in criminal measures that also have a greater potential for deterrence. There is a trend in criminal law towards sanctions that have been used in administrative and civil law in the past. These new forms of penal sanctions include adverse publicity, forfeiture of illegal profits, reparation orders, and incapacitative and coercive measures such as interdiction of professional activities and closing down enterprises, in addition to community service and probation.

30. A comparison of sentencing instruments of a non-penal character shows that they are quite similar to criminal law measures. Most countries provide for administrative sanctions in the case of breaches of administrative orders or norms. The most common form of those sanctions is the administrative fine, which can partially be utilized in cases involving the forfeiture of profits or savings derived from illegal acts. In addition, compensative or restitutive, coercive and preventive provisions are made available in administrative legislation. Such provisions include clean-ups, the closing of enterprises, the revocation or alteration of permits, and confiscation. Civil law sanctions offer for the most part similar sorts of remedies.

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*In many countries these difficulties have been encountered in converting international treaties into national laws. For example, in Nigeria, of some 30 international conventions that had been signed, only 5 had been transformed into national laws.

31. At the level of environmental criminal law enforcement, it is important to keep in mind that administrative agencies, criminal justice agencies and the judiciary are independent organizations. If organizational independence is a value worth maintaining, specialized know-how is a necessary precondition for the work of the judiciary in the majority of environmental cases. A lack of such expertise must be remedied somehow. It can be done by increasing the skilled personnel and advanced technical resources of the judiciary. More often than not, however, that would entail duplicating existing resources within environmental administrations. The solution might be an integrated approach, with a high level of cooperation and communication between the competent authorities (e.g. technical assessors to aid the court in sentencing; a specialized environment court or an environment panel or chamber, as recently established by the International Court of Justice at The Hague).[11]

32. For a number of reasons, in many countries knowledge about law enforcement is incomplete. First, environmental protection laws may be so recent that it is impossible to draw conclusions about their implementation. Secondly, law enforcement data may not be collected or published. Thirdly, lack of public disclosure laws may make it difficult to obtain information even if it exists.

33. Jurisdictions vary considerably in the type of polluter who is sanctioned. In some countries it appears that small corporations and individuals are more likely to be sanctioned than large companies or government-run agencies. In others, corporations are more likely to be prosecuted than individuals. There are different views on whether prosecution profiles are representative of polluters. While some would support such a view, others consider that transnational corporations and government agencies are simply treated more favourably than less powerful actors such as members of the public or small-scale businesses.

34. There is a common misconception that failure to apply pollution laws indicates that either the legislation or its administrators are deficient.[12] However, there is the perception that statutes are being inadequately and sometimes inconsistently enforced, as evidenced by continuing (and sometimes alarming) pollution problems. One readily apparent reason relates to the desire to enhance industrial development, a desire common to both developing and developed countries. In developing countries, desire for the economic, social and political benefits of industrialization, coupled with inequalities of bargaining power and fear that foreign or transnational corporations may turn to other countries if environmental protection requirements are too rigorous, may play a part.

E. Other strategies and instruments facilitating compliance

35. Attitudes to pollution - held by governments, officials and members of the public - are also important in determining what statutory protection is given to the environment and how that protection is implemented. Political orientations may also have an impact on attitudes towards pollution. Societies that have made industrialization a priority at the expense of other goals have tended to consider pollution to be of negligible importance.

36. Compliance with legislative requirements may be sought through means other than law enforcement, with conciliation being another strategy. Traditional dispute resolution might be conciliation-based. Education is another compliance strategy that is used, often in conjunction with conciliation.

37. Another approach is the proactive method, which uses environmental compliance audits as a means of assuring management that the health, safety and environmental responsibilities of its corporation are being adequately discharged and that no significant non-compliance exists. Benefits for corporations thus include independent verification of compliance with environmental legislation, the identification of deficiencies in management or system-related problems, an added incentive for self-evaluation and an improved capacity to consider environmental issues in business planning.

38. Environmental protection officials in some developed countries have referred to the resource-intensiveness of criminal sanctions as one reason why other avenues are often tried first and have also emphasized the need for training in criminal investigation to be supplied to enforcement officers in their agencies. Resource constraints may affect the enforcement of environmental protection statutes, especially in developing countries.

39. Finally, most of the environmental protection efforts are aimed at pollution control, while hardly any resources are allocated to pollution prevention. The pollution prevention approach can be an effective and flexible alternative to the damage control approach. The pollution prevention approach can be followed by creating a framework that encourages pollution prevention choices in the best interest of the individual or entity concerned.

40. Since choices are generally made on the basis of cost-effectiveness, it is important that the total cost of breaching environmental laws (including liability) is clear to the regulated entities and that the alternative of preventing pollution exists. The savings that would result from adopting the prevention option should be manifest.

II. CRIMES AGAINST THE ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

A. Sustainable development: socio-economic issues versus environmental concerns

41. In 1987, *Our Common Future*, the report of the World Commission on Environment and Development, drew the world's attention to the concept of sustainable development, meeting "the needs of the present without compromising the ability of future generations to meet their own needs" (A/42/427, annex, Overview, para. 27).

42. The enforcement of environmental protection laws often raises difficult questions related to many of the issues contested in debates about sustainable development.[13] A number of factors have been identified as contributing to inadequate environmental laws and deficient enforcement. Among those factors are lack of priority accorded to environmental issues, lack of resources and, especially in developing countries, the desire to enhance industrial growth.

43. Unsustainable consumption and production patterns in the developed world not only degrade the environment, but also create imbalances between North and South and exacerbate poverty. Unsustainable consumption and production were identified in Agenda 21, adopted by the United Nations Conference on Environment and Development, as the "major cause of the continued deterioration of the global environment".[14]

44. Truly sustainable development is vital to achieving a better environment and fostering a criminal justice system that can be used vigorously and effectively to achieve environmental protection.

45. The industrialized world's traditions of consumption and economic growth have led many to equate development with economic growth; however, "to grow means 'to increase naturally in size by the addition of material through assimilation or accretion'. To develop means 'to expand or realize the potentialities of; bring gradually to a fuller, greater or better state'. In short, growth is quantitative increase in physical scale, while development is qualitative improvement or unfolding of potentialities. An economy can grow without developing, or develop without growing, or do both or neither".[15]

B. Public awareness and sensitivity

46. In most countries environmental issues are regularly dealt with in national newspapers. Media coverage of environmental issues was stimulated in the run-up to the United Nations Conference on Environment and Development. In addition, in many countries, major political parties have acknowledged the importance of environmental issues and "green" parties have been established and are proliferating.

47. "Green" parties have occupied positions of considerable power at the national level in some of the countries undertaking research for the workshop on environmental protection at the national and international levels.* In many countries, such parties have proliferated at the local level.

48. Public opinion surveys are another barometer of support for environmental issues in the community. Even during the current global recession, there are indications in some countries that issues such as pollution continue to be regarded as important and that pollution offences are regarded as extremely serious, even when compared with traditional crimes against the person.** Thus, in Australia, 57 per cent of respondents in a recent poll gave higher priority to environmental protection than to economic growth.[16]

49. Public awareness is a significant determinant in ensuring that environmental protection legislation is enacted and implemented and that sufficient budgetary resources are allocated to the administration and enforcement of environmental laws. In addition, if the criminal justice system is to be used to protect the environment, it is important that the public perceives environmental offences to be sufficiently serious to be regarded as "crimes".

50. The general public in many developing countries, however, may see the environmental issues in general as being less important and those environmental issues that are regarded as important are often different from those regarded as important in developed countries. Not surprisingly, environmental issues may be overshadowed in impoverished societies by "survival" issues such as health, sanitation and housing. In some countries, environmental protection has, in the past, been seen as an invention of the developed world. While the environment may now be a more important issue on the public agenda, many people in developing countries still ask what proportion of their scarce resources can they afford to devote to environmental protection.

C. The role of non-governmental organizations***

51. There was strong support for non-governmental organizations as partners in sustainable development at the United Nations Conference on Environment and Development. Agenda 21, the action plan of the Conference, dealt specifically with the role of non-governmental organizations, including formal and informal organizations and grass-roots movements. It identified their strengths as independence, credibility, expertise and experience; it noted that they were an important source of innovation and action; and it advocated increased support for them.[17]

52. In relation to crimes against the environment, non-governmental organizations have a role to play that involves detection, prevention and sanctioning. As a by-product of those activities, and in addition to them,

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*Die Grünen in Germany is a prime example.

**For example, in two surveys conducted in Australia, 2,500 persons were asked to rank 13 offences and to select appropriate sentences for each. A pollution offence in which a factory knowingly polluted the water supply and caused the death of one person was ranked as the third most serious offence. (See P. Wilson, J. Walker and S. Mukherjee, "How the public sees crime: an Australian survey", *Trends and Issues in Crime and Criminal Justice*, No. 2, October 1986; J. Walker, M. Collins and P. Wilson, "How the public sees sentencing: an Australian survey", *Trends and Issues in Crime and Criminal Justice*, No. 4, April 1987.)

***Reference is also made in the present subsection to individual citizens and grass-roots organizations.

non-governmental organizations can keep environmental issues on the public and political agendas. As a result, Governments may be stimulated to deal with environmental degradation through the criminal justice system as well as by other means.

53. Non-governmental organizations such as Greenpeace International have been important in exposing transboundary pollution, maritime pollution and the transport of hazardous wastes. In addition, they have acted as a conduit for information. Their networks at the local, national and international levels, their connections with other organizations and their skill in using the media have been important in obtaining information about pollution and hazardous waste incidents, in publicizing these matters and in elaborating resolutions, using legal, administrative or political means.

54. Non-governmental organizations have also been active in exposing domestic pollution resulting from rapid and unchecked industrial development.* In one case, evidence of the scale and nature of the pollution was provided by local citizen groups who documented the pollution, publicized it and established a system for monitoring emissions from industrial plants.

55. In some countries, non-governmental organizations have been important information providers in compiling and issuing of state of the environment reports. Regular and independent reporting on the state of the environment is crucial to identifying problems and monitoring progress made towards environmentally sustainable development.

56. Individual citizens and grass-roots organizations have stimulated government authorities or the police to investigate and apply sanctions for pollution incidents. Citizens are often in the best position to uncover pollution incidents; administrative agencies and the police simply do not have the resources to monitor all potential polluters at all times.

57. Citizens and non-governmental organizations can play an important role in stimulating Governments to reassess and reform their environmental policies and environmental laws and, in doing so, can be a powerful force in the prevention of crimes against the environment and in the protection of the environment.

58. Non-governmental organizations have themselves played a direct role in the sanctioning of offenders - both extra-legally and by recourse to conventional legal channels. In some countries, such as Australia and China, there have been reports that non-governmental organizations have taken direct action against polluters, ranging from temporary interference with discharge pipes to the sabotaging of polluting industries. Such action is commonly taken when pollution is known to government authorities but continues unabated. Non-governmental organizations have also instituted legal action against polluters and government agencies.**

59. A final role for non-governmental organizations and citizens may be to participate directly in the criminal justice system as initiators of prosecutions against environmental offenders. This is a contentious issue for many legal systems, but it is one that is particularly important for environmental protection groups and pollution victims.

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*In, for example, Cubatao, Brazil, in the 1970s, action by non-governmental organizations played an important role in improving the environment (see J. Hardoy, D. Mitlin and D. Satterthwaite, *Environmental Problems in Third World Cities* (London, Earthscan, 1992)).

**In some countries, non-governmental organizations and individuals have been allowed to file suit on behalf of an entire community. For example, the Swedish Society for Nature Conservation has been given standing to sue in a civil case involving pollution of the Swedish coastline; public interest litigation has been recognized by the Indian supreme court; and the Philippine supreme court granted standing to sue to prevent further logging operations in forests.

III. TRANSBOUNDARY POLLUTION

60. Transboundary pollution stems from three significant sources:

(a) Industrial plants and other land-based sources emitting or discharging pollutants into the sea or transporting them to the territory of another State or to the global commons (atmosphere, oceans);

(b) Movement and disposal of hazardous chemical, medical and radioactive wastes;

(c) Pollution by oil or other noxious substances from vessels sailing on the high seas or in territorial waters.

61. The present paper deals exclusively with these three sources, although there have also been documented reports of "natural pollution"* and of pollution where the only transboundary element was that the plant discharging toxic fumes was owned by a foreign company.**

A. Transboundary emissions and discharges

62. Pollution originating in one State and damaging the ecosystem of another State or the global commons has had a relatively longer history than the other two types of pollution. International law in this area has developed through bilateral treaties, starting with the Canada-United States boundary waters treaty (1909).*** The Declaration of the United Nations Conference on the Human Environment (the Stockholm Declaration)[18] (1972) marked the beginning of a global attempt to develop international law. Since then important conventions have been concluded, e.g. the Convention on Long-range Transboundary Air Pollution[19] (1979), the Vienna Convention for the Protection of the Ozone Layer (1985), the United Nations Framework Convention on Climate Change (A/AC.237/18 (Part II)/Add.1 and Corr.1, annex I) and the Convention on Biological Diversity.[20]

63. Despite these bilateral treaties and multilateral conventions, transboundary pollution continues unabated. The situation is complicated by the fact that States are often both polluters and recipients of pollution from other countries. This is evident from cases of acid rain damaging the ecosystems in, for example, Canada, Japan, Poland and Sweden.

64. National criminal laws can be given extraterritorial application by virtue of the principle that States may consider an offence to be committed both where the act was perpetrated and where harm was suffered. Without the cooperation of the authorities in the State that is the polluter, however, any prosecution is likely to be futile and may strain international relations.

65. Alternatives to criminal justice have far greater potential. They include:

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*Involving, for example, water hyacinth weeds in Nigeria and the locust plague in Tunisia.

**In China.

***And including the Convention on the Protection of the Environment between Denmark, Finland, Norway and Sweden (1974), the border rivers agreement (1971), the Convention on the Protection of the Rhine against Chemical Pollution (1976), the Convention concerning the Protection of the Rhine against Pollution by Chlorides (1976) and arbitral awards, the most important of which have been Trail Smelter (1938) and Lac Lannoux (1957).

(a) Commitments to reduce or eliminate pollution through bilateral treaties and multilateral conventions;*

(b) Negotiations (such as those in Japan concerning transboundary pollution derived from acid rain);

(c) Disputing resolutions through arbitration, mediation etc. (such as proposals made by bar associations in Canada and the United States of America to their Governments; recommendations of the Organization for Economic Cooperation and Development (OECD); and provisions in some recent conventions);

(d) Equal access to courts and administrative processes to nationals of other countries to commence civil proceedings to obtain compensation and redress and to facilitate mutual enforcement of judgements etc. (OECD recommendations; transboundary pollution reciprocal access laws in several Canadian provinces; the North American Free Trade Agreement between Canada, Mexico and the United States etc).

66. A prerequisite for the success of these mechanisms is the existence of a friendly atmosphere between States. International cooperation produces better results than confrontation. International efforts aimed at combating criminality can be further strengthened by giving non-governmental organizations the right to commence prosecution and standing to sue. Giving victims or private organizations representing them, as well as organizations whose primary objectives are protecting the environment, standing to commence legal proceedings, including prosecution, and to ensure that the resulting judgements are enforced, can be effective in combating transboundary pollution.

B. Hazardous waste

67. The development of international law in the area of hazardous waste began with the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter[21] (1972), usually referred to as the London Dumping Convention, which prohibited the dumping of hazardous waste in the oceans, and the United Nations Convention on the Law of the Sea (1982), in which the signatory States agreed to protect the marine environment by, among other measures, dealing with pollution of the marine environment, and minimizing to the fullest extent possible the release of toxic, harmful or noxious substances.[22]

68. The growing amount of waste exported by developed countries to developing countries in Africa, East Asia and Latin America put pressure on the international community to call for the control of such trade. With OECD taking a lead role by adopting a recommendation in which OECD member States were asked to notify the authorities of the importing State before exporting hazardous wastes to States not members of OECD, the international community responded by concluding in 1989 the Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal,[23] in which signatory States agreed to prohibit the illegal transportation of hazardous wastes to and their disposal in other States without the prior informed consent of those States, to take back illegally shipped wastes and to punish offenders with criminal sanctions. It was followed by the adoption in 1991 of the Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement of All Forms of Hazardous Wastes within Africa, in which the import of hazardous wastes into Africa was declared illegal and a criminal offence. The Council of the European Communities also issued a set of rules on the transport of waste.**

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*For example, the Convention on the Protection of the Environment between Denmark, Finland, Norway and Sweden; the Convention on the Protection of the Rhine against Chemical Pollution; the Convention concerning the Protection of the Rhine against Pollution by Chlorides; the Convention on Long-range Transboundary Air Pollution and its protocols; and the Vienna Convention for the Protection of the Ozone Layer and its protocols.

**See Council regulation (EEC) No. 259/93, on the supervision and control of shipments of waste within, into and out of the European Community (*Official Journal of the European Communities*, No. L 30, 6 February 1993, p. 1).

69. Despite national criminal laws and international conventions, trade in hazardous wastes is still a serious problem. Because of the high cost of legal disposal of hazardous wastes in developed countries, there is a great temptation for producers to lure poor, cash-strapped countries to import such wastes by providing attractive financial inducements and even by bribing officials. Transport documentation, laboratory analyses and consent documents are often doctored by shippers and transporters, thus escaping scrutiny by customs and border officials.

70. Some of the above-mentioned practices occur because of the imprecise language used in the conventions, such as the definition of waste (whether waste destined for recycling is waste), the definition of parties (whether brokers or international facilitators are covered by the Basel Convention and whether the consent of transit countries is necessary).

71. More serious weaknesses in combating this type of criminality, however, are the difficulties in detecting, investigating and tracking vessels sailing the oceans and vehicles criss-crossing international borders. In this respect, developing countries lack the infrastructure and laboratory and testing facilities for determining whether the "goods" they receive from developed countries are prohibited wastes.

72. Criminal sanctions have the greatest potential in the area of the illegal transportation and disposal of hazardous wastes, which organized crime appears to have penetrated. International non-governmental organizations, such as Greenpeace International, or an international team of investigators, such as the "green helmets" proposed by the Norwegian Government, could assist governmental efforts in combating midnight dumping in remote areas and on the high seas. Furthermore, where national criminal courts are powerless to deal with such criminality, the idea of giving criminal jurisdiction to an international tribunal might have considerable merit.

73. Vigorous implementation and enforcement of international conventions, such as the Basel Convention, using national laws, with stiff criminal penalties for contravention, are needed to achieve success in combating cross-border and international criminality. International cooperation in the form of information, notification of movement of cargo, and mutual assistance in investigation and prosecution would also be of considerable assistance.

74. Providing assistance to developing countries that lack administrative infrastructure, investigative techniques and laboratory facilities to analyse samples of shipments, in the form of technical assistance provided by developed countries, would significantly improve enforcement efforts at the international level.

75. Treating as an international crime the illegal dumping of toxic hazardous chemical and radioactive wastes, which create serious danger to the ecosystem of another State or to the global commons, might deter this type of criminality. The proposals of the International Law Commission to include deliberate and serious damage to the environment in the category of crimes against the peace and security of mankind, if adopted by the community of States, will go a long way towards eradicating the crime, especially if the concomitant Commission proposals on an international tribunal and international investigative and enforcement machinery are adopted.

C. Marine pollution

76. Marine pollution has been regulated by both national shipping and port and harbour laws and, since the establishment in 1948 of the International Maritime Organization, by international conventions such as the International Convention for the Prevention of Pollution of the Sea by Oil[24] (1954), the International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties[25] (1969), the International Convention on Civil Liability for Oil Pollution Damage[26] (1969) and its protocols, the Protocol

of 1978 Relating to the International Convention for the Prevention of Pollution from Ships and, more recently, the United Nations Convention on the Law of the Sea.

77. Most pollution incidents can be handled through national marine protection laws, but, the fines provided in such laws are often unrealistically low when dealing with foreign vessels that pollute the territorial waters of developing countries. Conventions such as the United Nations Convention on the Law of the Sea,[27] however, prohibit discrimination against foreign vessels. In the case of the United Nations Convention on the Law of the Sea, monetary penalties only may be posed in respect of violations committed by foreign vessels in the territorial sea, except in the case of a wilful and serious act of pollution in the territorial sea.[28]

78. Victim States are primarily interested in ensuring expeditious clean-up as well as deterrence. Alternative sanctioning strategies such as plea bargaining and compensation agreements can sometimes ensure speedy clean-up. In some cases, innovative sanctioning strategies, such as resort to the deep pockets doctrine, where the financial penalty is intended to be, and ultimately is, borne by insurers, can produce successful results.

79. The prosecution of owners of foreign flag vessels that discharge pollutants on the high seas that then enter and pollute territorial waters poses problems. If they are not within the jurisdiction of the country that has been harmed by such pollution, their authorities have to rely on the national authorities of the countries to which they belong to prosecute those owners. Such reliance has been found to be unsatisfactory in several instances.

80. International efforts to combat marine pollution should be directed at ocean tramps that are often used to transport hazardous wastes. Such vessels, which tend to be unseaworthy when they start their voyages, may break up in stormy weather. It may also pay for owners of such vessels to scuttle them rather than deliver the cargo of hazardous wastes to its destination. International conventions should be strengthened, making it a criminal offence to commit such an act, whether deliberately or out of negligence.

IV. POLLUTION ORIGINATING FROM THE OPERATION OF LARGE-SCALE PLANTS

A. Developmental and political factors

81. The obstacles to effectively influencing enterprises by criminal law are different in common law and civil law countries. Furthermore, the role of criminal law depends on complex legal, economic, technical and social factors. Therefore, the law established in a system has to be interpreted according to a broad range of different elements. As a rule, the multitude of interests in this field favours flexible strategies. To this must be added the social power of enterprises. An important factor for the implementation of the law is whether the enterprises are private or State-owned, especially in developing countries. In cases involving State-owned enterprises, it is a fact that, despite the principle of separation of powers, law enforcement is rendered more difficult. Different levels of development of administrative law are established and different standards are set which strongly influence the effectiveness of imposing criminal liability on enterprises. Last but not least, there is a trend in a number of countries towards establishing new criminal laws after spectacular pollution incidents have occurred. As a rule, there is uncertainty in interpreting the new laws for a long period of time. Special problems arise in countries that lack norms regarding implementation. For example, in China there was a case involving environmental pollution of property in a rural region in which the population resorted to self-help since the law did not stop pollution.

B. Problems of criminal responsibility

82. It is a continuing problem for criminal law, which normally punishes the wrongful decision of a person in a specific situation, to deal with faulty developments over time, complex structures of enterprises, unclear liability of enterprises and agencies, and the complex interests involved.

83. In all countries there is a trend towards broadening the criminal responsibility of individuals. This is particularly the case in civil law countries in which liability of enterprises is alien to criminal law. The principle of making the acts of a single individual criminal in order to hit the enterprise through its employees, thereby influencing it to avoid committing further crimes, has been shown to have several limitations. One reason is that the functioning of a large-scale enterprise depends on different systems, departments or substructures and not only the guidance of a single individual. Another reason is that in many countries there are limits to the responsibility of a single individual.

84. This widening of individual responsibility can even be found in countries that have considerable experience with corporate liability. The axiom of corporate liability is that the enterprise must identify itself with the persons in charge of it, upon whom it depends for its activities, that is, on the basis of vicarious liability for employees. In Canada, for example, no problems exist in that common law jurisdiction in dealing with "organized irresponsibility" or faulty decisions over time. Although this may function on the basis of specific legal and social conditions prevailing in Canada, it is unlikely to serve as a model for all countries. From the standpoint of many other countries, an important principle of individual criminal law is endangered: the delimitation of the realm of responsibility of individuals in the face of exaggerated claims of the state repressive apparatus. The more a sanction is alienated from certain principles of blameworthiness, the more it loses its punitive character. In the end, many civil law countries fear that the introduction of corporate criminal liability would decrease the effectiveness of punishing natural persons under the criminal law, by reducing the distinctions between criminal, civil and administrative law penalties.

85. Another problem is that in many countries only classical criminal sanctions have been provided for. Often only fines are available, especially in cases involving non-compliance with administrative regulations and orders.

86. In modern societies, the task of determining what risks are acceptable is being delegated more and more to administrative agencies. Criminal law is only considered useful in cases involving resistant polluters who are unwilling to cooperate with the administrative authorities. In other countries there is a tendency to reduce administrative regulations according to the principle of "controlling the controllers".

87. Criminal law has produced effective results in a few countries. The influence of criminal law in, for example, Australia and Canada seems to be more significant than in certain other countries, where criminal law plays a minor role in dealing with large-scale enterprises. Sentences usually take the form of fines.

C. Models of criminal responsibility of corporations

88. At present, there are three reasons for the launching of an international discussion on corporate liability: first, to encourage members of the international community to be more responsible in their management of risks to the environment; secondly, to explore adequate methods of imputing responsibility to individuals; and, finally, to prevent a reduction of individual liability in criminal law.

89. In the light of the potential dangerousness of high-risk enterprises, it seems even more necessary to agree on a common approach and terminology. The discussion that follows is a step in that direction. There are three main models of criminal responsibility of corporations: an act of management as the enterprise's own misconduct; defective corporate organization; and the principle of causality (initiation).

90. *An act of management as the enterprise's own misconduct.* An enterprise must identify itself with its management, upon which it is dependent for its activities (that is on the basis of vicarious liability for employees). Although many options exist to impute liability to enterprises, the legislative and judicial organs find themselves compelled to a step-by-step broadening of individual criminal liability in order to facilitate corporate liability.

91. *Defective organization of the enterprise.* An incident, such as environmental pollution, is linked to defective organization of an enterprise. It is no longer a question of personal responsibility for a single faulty decision (which may be almost impossible to detect since it is the result of developments over a long period of time in the enterprise), but rather a type of organizational blame of the entity for neglecting its duty to concern itself with the adequate balancing of the risks involved in opening and operating a complex system.

92. *The causation (initiation) principle.* Proof of actual deficits in corporate organization is completely dispensed with. The creation of an organization with complex operational structures and the carrying out of intrinsically dangerous processes *per se* are instead deemed to be sufficient. Prerequisites of corporate liability are only specific results (serious damage to the environment, violation of emission standards) and economic benefit to the enterprise.

D. Perspectives

93. The international trend encourages the liability of enterprises, especially in cases involving large-scale enterprises and faulty risk management over time. Comparative analysis has also opened a broad spectrum of options. To think that one or the other could quickly solve a country's problem, however, ignores the fact that the domestic structures and conditions of implementation must first be analysed. Only then can it be decided (in conformity with criminal, administrative, civil and constitutional law) whether and to what extent one or the other concepts of collective responsibility may be recommended.

94. All attempts to reduce the responsibility of individuals and organizations to a common denominator (such as a social concept of guilt) suffer from the fact that the spheres of responsibility of individuals and organizations may coincide but must diverge for the simple reason that the elements for potential culpability of an enterprise are completely different. Thus, equating collective responsibility and individual responsibility inevitably leads to an overtaxing of the concept of liability of enterprises and an overall weakening of the concept of individual criminal liability.

95. Therefore, the establishment of a separate criminal system for enterprises could be recommended,* in which rules, similar to those establishing individual criminal liability, are applied to enterprises, while still taking into account the differences between these two classes of offenders. Individuals and enterprises have different forms of liability arising from their differing goals, structures and functions. Individuals employed in enterprises act collectively as the firm, have collective knowledge that is deemed to be that of the firm, but the "guilt" associated with criminality is the responsibility of the enterprise.

96. This concept facilitates the identification and the solution of new problems of modern societies, where more individual liability no longer seems appropriate. And it offers options corresponding to the status of the domestic legal system in developed or developing countries, in civil law or common law countries. Thus, laws that are not merely symbolic but also effective can be introduced.

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*See, for example, D. Cotic, "Protection of the environment through penal law in Yugoslavia", *Protection of the Environment and Penal Law*, C. Zanghi, ed. (Bari, Cacucci, 1993), pp. 197-204. For further details, see G. Heine, *Die strafrechtliche Verantwortlichkeit von Unternehmen* (Baden-Baden, Nomos), forthcoming, pp. 218 ff.

V. SMALL-SCALE ENTERPRISES AND INDIVIDUAL POLLUTERS

A. Small-scale enterprises, individual polluters and environmental degradation

97. The hallmark of the stereotyped picture of pollution and natural resource degradation is its large scale: powerful polluters, large areas affected, numerous victims and irreversible damage. In reality, however, environmental degradation is not caused solely by the big and powerful. It results from a combination of multiple attacks in which small polluters play a relevant role.

98. Particularly in less developed countries, individuals and small-scale enterprises are largely responsible for the unsustainable use of environmental resources. Contrary to popular opinion, the polluting behaviour of an individual or a small-scale enterprise* may have an environmental impact greater than that of a large-scale enterprise. "Small-scale" polluters (individuals or small-scale enterprises) are often "large-scale" polluters from the standpoint of the damaging effects caused by their behaviour to the environment.**

99. The impact of environmentally harmful activities carried out by small-scale polluters can be substantial in two ways: either the damage is relevant *per se* or minor damages may become relevant due to their cumulative effects. Pollution by small-scale enterprises, businesses and individuals, however, may account for only a minor portion of environmental degradation in some countries.

B. Challenges for control of environmentally harmful activities of individuals or small-scale enterprises

100. The problems covered by the present subsection are related to illegal hunting, deforestation, the disposal of toxic and dangerous waste, and individual mining, particularly in developing countries. Provisions to protect the environment against types of individual behaviour are mostly designed to protect public health. The activities of small-scale enterprises can also be dangerous to the environment because they are widespread and often do not have adequate systems of control.

101. At first sight, the environmental degradation caused by small-scale enterprises and individuals appears to be more easily controllable by law enforcement. Viewed individually, small-scale enterprises and persons that are polluters, being neither big nor powerful, usually have little political or economic strength*** and are not able to manipulate the media. In short, they do not have the funds necessary to hire lobbyists or top law firms.

102. Monitoring major corporate polluters involves a series of unique enforcement constraints (such as their economic and political power, their ability to secure expert opinions and the services of reputable lawyers).

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*For example, in Poland, a farmer dumped a barrel of fecal matter on a water-bearing area, leaving an entire community without its regular water supply for 17 days. And in Germany, a small chemical plant polluted the drinking water of a community of 20,000 people with carcinogenic substances.

**An example of the environmental impact of small-scale polluter behaviour is found in the Brazilian Amazon, where deforestation is considered to be among the world's most significant ecological disasters (see A. Alvazzi del Frate and J. Norberry, "Rounding up: themes and issues", *Environmental Crime, Sanctioning Strategies and Sustainable Development*, A. Alvazzi el Frate and J. Norberry, eds. (United Nations publication, Sales No. E.93.III.N.4, p. 3)). It is estimated that between 1980 and 1988, gold-panning, which is practised by thousands of individuals, resulted in around 855 tonnes of mercury being dumped into the environment (see José Francisco da Fonseca Ramos, "Garimpagam: poluiçao quimica e física", Seminário Internacional sobre Meio Ambiente, Probreza e Desenvolvimento da Amazônia, Belém, Brazil, 16-19 February 1992, p. 86).

***As a group, however, such individuals may have substantial political and economic power. The representative body of the *garimpeiros* (gold prospectors) of the Brazilian Amazon has free access to federal legislators native to the region and plays a major role in keeping them in office.

Control of small-scale enterprises and individual polluters, however, poses problems of another nature, problems that have to do with the enforcement of laws against polluting behaviour rather than with the legal regulation of such behaviour.* First of all, it is extremely difficult to detect some behaviour of this type because it is not as visible as the polluting behaviour of large-scale enterprises and it often occurs in remote, hard-to-reach areas. Secondly, such behaviour is far more numerous, and is rarely concentrated at any specific site or in any one region, and it does not attract the attention of the mass media. Thirdly, because it involves ordinary citizens, it elicits less social disapproval than degradation caused by large corporations. Fourthly, especially in less developed countries, such behaviour is often not "profit-oriented" but "survival-oriented". It often involves millennia-old traditions or is crucial - being the sole means of sustenance - to human survival. In Latin America, for example, the efficacy of any legal model, and more so the criminal law model, is highly questionable in the event of mass violation where the forbidden behaviour is deeply rooted in the social fabric. "This legislation ignores the fact that the behaviour it attempts to correct through these sanctions does not normally involve individual deviations from an imposed legal order, but generalized social behaviour which is deeply rooted in society as a result of the predominant style of development based on production and consumption patterns that often clash with environmental protection."[29]

C. The role of criminal law

103. Any objective assessment of the issue of pollution caused by individuals and small-scale enterprises shows that, with a few exceptions, law plays an insufficient controlling role. Administrative laws run the risk of never being implemented in practice because, especially in developing countries, there are almost no agencies to enforce the set of administrative environmental rules and when they do exist, they lack the material means and scientific expertise. The situation is not much better in the area of civil law. On the one hand, there are no efficient and expeditious mechanisms for providing access to justice; and on the other, seldom do individuals and small-scale enterprises have the funds to remedy or mitigate the environmental damage they have caused. This failure of administrative and civil law generally gives rise to a familiar and much criticized phenomenon: laws that "don't catch on".

104. The issue of the role of criminal law in environmental protection should be viewed in the context of ineffective legal models. Large-scale and small-scale polluters do not react to civil and administrative sanctions in the same or even similar fashion. In other words, deterrence is different for the two groups. Big corporations fear not just administrative sanctions (administrative restraining orders can be catastrophic to a large industrial complex), but also the negative effects - image deterioration and the heavy cost of damage payments - of civil suits seeking a remedy for environmental damages.** Small polluters see administrative and civil law from a different angle. Administrative sanctions (such as fines and interdiction) have less of an impact on small polluters because they enjoy greater flexibility in moving from one activity to another. In certain cases, such as deforestation and private mining, all they need to do is "pack up" and move to another region or State. Furthermore, if convicted persons cannot be found, court orders requiring them to pay environmental damages would not be enforceable.

105. When environmental regulations and law enforcement are implemented, criminal law has some advantages over civil and administrative law. Criminal sanctions are feared both by big corporations (even

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*It should be noted that enforcement problems are generalized in developing countries both for large-scale and small-scale polluters. For example, in Latin America and the Caribbean, the enforcement of environmental legislation has faced widespread problems of efficiency and efficacy (see R. Brañes, *Institutional and Legal Aspects of the Environment in Latin America, Including the Participation of Non-Governmental Organizations in Environmental Management* (Washington, D.C., Inter-American Development Bank, 1991), p. 7).

**Not to mention the matter of estimating environmental damages, particularly in the case of natural resources; normally, in environmental offences *per se*, criminal law waives exact assessment of damages to the environment.

in systems lacking criminal liability for corporations) and by individuals and smaller companies.* addition, countries generally have more comprehensive and nationwide criminal law enforcement systems administrative and environmental law enforcement systems. Judges, public prosecutors and police force empowered to enforce the law in a variety of situations. Finally, complex legal issues involving colle behaviour - common in the case of large corporations - hardly ever arise with regard to small polluter

106. There are, however, disadvantages or limitations to using criminal provisions. In addition to is involving the burden of proof that are mentioned by many authors,** criminal law is notoriously *ul ratio* and does not apply to all environmental degradation modalities.*** Furthermore, particu regarding the actions of small polluters, application of a criminal sanction requires far stronger cultural social support than the mere enforcement of an administrative measure (for example, a fine) or a sanction (an order to remedy the damage). Small polluters have a greater chance of successfully alle ignorance of criminal legislation. In addition, arguments such as state of necessity and poverty are m more powerful in cases involving small polluters than in cases involving large corporations. Environm legislation is often not enforced in developing countries because of a perceived scarcity of resources. poverty rationale has a major impact in criminal law. In many cases, small polluters invoke the "sta necessity", which is frequently used in criminal law to acquit the offender.

107. Finally, the fact that judges, public prosecutors and police are accustomed to enforcing criminal does not make it any easier to enforce environmental criminal provisions, as the problems that ma encountered are of great technical complexity and, as a rule, have no precedent in the legal system.

D. Trends and issues

108. In developing countries there are problems concerning individuals and behaviour that might not o in more developed areas or countries. For example, the Amazon is not being contaminated solel corporations; it is mostly being contaminated by individual mining, though the damage might amou millions of dollars and might be irreversible. Hunters who endanger wildlife species should als considered individual polluters.

109. One major problem typical of large-scale pollution is corporate liability. At the legislative level might be problems with the values to be protected in developed and developing countries. In less devel countries, cases involving small-scale pollution might be the most important ones. In many devel countries minor offences are decriminalized. Although decriminalization does not mean that the conduct unpunished (it is still subject to penalties of a non-criminal nature), there is currently a trend in s countries towards making pollution by individuals (which is perceived as a major problem) a criminal off and a trend in other countries towards decriminalization of pollution by individuals. These two diff trends make it difficult to present a single model and to propose a long-term strategy in this area.

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*It is no wonder that some countries have found it easier to include hard sanctions (such as objective civil liability) than environmental offences in their environmental laws. Such was the case in Brazil with law No. 6938/81 (the na environmental policy act), when the national congress barred the inclusion of any criminal provision whatsoever (see Paulo Of Leme Machado, *Direito Ambiental Brasileiro* (São Paulo, Malheiros, 1992), p. 398).

**See A. Alvazzi del Frate and J. Norberry, eds., *Environmental Crime, Sanctioning Strategies and Sustainable Develo* (United Nations publication, Sales No. E.93.III.N.4), p. 11. Even in offences committed by small-scale enterprises or indivi there are problems in establishing causation, particularly when the legal provision requires evidence of damage to the enviro to be proved.

***In, for example, Italy and Poland, criminal sanctions tend to be applied only in more serious cases involving environm degradation.

110. Developing countries often lack the necessary resources to enforce environmental provisions, whether criminal, civil or administrative. The protection of the environment, however, is an integral part of development and is affected by any failure in the justice system. Criminal environmental provisions might provide the judiciary with a direct role by making it responsible for environmental protection.

111. Two major problems emerge from an analysis of cases involving pollution by individuals or small-scale enterprises: (a) the "over-criminalization" of everyday activities of small-scale enterprises and individuals; and (b) the consequential loss of credibility of control activities through criminal environmental laws. The type of punishment that is considered more appropriate in cases involving small-scale enterprises or individuals is not applicable or does not work in cases involving large-scale enterprises and vice versa. In countries with a federal system, the control of such offences committed by small-scale enterprises or individuals is carried out by the local government. This might result in more prompt and effective action and in a smaller number of failed cases involving pollution by larger-scale enterprises. Where the local culture favours the illegal behaviour, however, it might be necessary to have some sort of federal or national jurisdiction over some of those cases.

112. In the light of principle 11 of the Rio Declaration on Environment and Development, which states that "environmental standards, management objectives and priorities should reflect the environmental and development context to which they apply",[30] there might exist differences for the category of small-scale polluters, since it is here that the poverty issue is of greatest importance. In other words, in developing countries sanctions might need to address issues and difficulties that are rarely or not at all known in developed countries. In any case, criminal environmental law does have a role to play in dealing with small-scale enterprises or individual polluters. As it happens in other areas of environmental law, no "illusions about 'quick-fix' solutions" (A/42/427, annex, chap. 12, para. 5) can be cultivated and criminal law is just part of a broader set of solutions.

VI. CONCLUSIONS

113. Criminal law has an indispensable role to play in the protection of the environment. Especially in certain cases, such as those involving the deliberate dumping of toxic waste for profit, it should be the primary tool used to combat crimes against the environment. The reasons for this include the potential of criminal law to enhance self-responsibility for environmental protection; to support risk-balancing by the State; to prevent further environmental destruction; and to avoid overburdening civil and administrative law with criminal provisions.

114. Criminal law must be viewed as only one of a number of means of achieving environmental goals. Protection of the environment cannot succeed in the absence of truly sustainable development. Public awareness and vigorous activity on the part of non-governmental organizations are important in placing the environment on the political agenda and keeping it there; in addition, they can be influential in obtaining criminal justice or other interventions - political, administrative or civil - to protect the environment.

115. Reforms in legislation, including the recognition of rights and obligations of citizens in national constitutions, and a wider range of judicial and administrative sanctions and procedures are necessary to enhance the potential of criminal law. In particular, States should be encouraged to modify rules of corporate responsibility where necessary in order to establish effective corporate liability, especially in cases involving faulty or negligent development over time within an enterprise. That would facilitate improved risk management, thereby reducing the risk for people and the environment; assist administrative agencies in risk-balancing; avoid the erosion of individual criminal law; and engender a "corporate culture" of compliance.

116. The workshop on environmental protection at the national and international levels may wish to consider whether Member States should establish minimum standards in environmental criminal law. While in some countries, especially developing countries, criminal law does not play a great enough role in protecting the environment, in others criminal law play too great a role.

117. On the procedural side, classical guarantees established for individuals are dysfunctional for new circumstances and questions. There is a need for more flexibility, especially in the prosecution of collective entities. Possibilities include:

(a) Making available preliminary injunctions such as warning and the closure of a part of a plant;

(b) Changing requirements as to the burden of proof;

(c) Establishing specialized investigative units and prosecutors;

(d) Providing more flexibility in standing to sue and to intervene in prosecutions;

(e) Providing better access to information about pollutants, enterprise activities and the activities of relevant administrative and enforcement agencies.

118. Classical criminal sanctions alone (such as fines and imprisonment) are insufficient to meet the challenges presented by crimes against the environment. A broader spectrum of sanctions is needed. To enhance the role of criminal law, States should provide the following sanctions, especially in respect of corporate wrongdoing:

(a) Closure of the enterprise;

(b) Sequestration (removal of managers, installation of experts for a specified period);

(c) Compliance programmes, including environmental audits;

(d) Compensation, confiscation and restitution;

(e) Clean-up or restoration orders;

(f) Prohibition of particular activities, exclusion from fiscal advantages, annulment or suspension of licences;

(g) Adverse publicity orders;

(h) Exclusion from government contracts.

In addition, sanctions such as community service orders and probation should be extended to environmental cases.

119. Sanctions and procedural reforms must be supplemented by factors facilitating their implementation. These factors include adequate material and human resources; adequate financing; and timely and quality training for criminal justice and administrative agency personnel.

120. In cases involving transboundary pollution or illicit traffic in endangered species, or in hazardous radioactive materials, however, it appears that international cooperation in the prevention and monitoring of

risk development has far greater potential. Such cooperation might include bilateral and regional agreements and treaties, negotiated solutions to common problems, joint fact-finding and mutual assistance in investigation, giving Governments as well as citizens equal access to the judicial and administrative process, alternative dispute resolution, and binding arbitration. It should be recognized, however, that some acts of aggression, such as the deliberate dumping of toxic and nuclear wastes in the oceans and environmental terrorism, should be treated as international crimes.

121. The United Nations system has a crucial role to play in protecting the environment by facilitating technical assistance, research, training, advisory services and education. It should also facilitate interaction between all those involved in innovative thinking in the field, including academics, non-governmental organizations, the private sector and government bodies. In addition, coordination with other intergovernmental organizations should be further enhanced by joining forces with other United Nations entities, such as the United Nations Environment Programme, the United Nations Institute for Training and Research and the Commission on Sustainable Development.

122. The workshop may wish to consider the following proposals for projects involving international cooperation:

(a) Enhancement of the gathering and exchange of intelligence, by cooperation with and greater use of the machinery provided by the International Criminal Police Organization (ICPO/Interpol), in the light of the decision on illicit traffic in hazardous wastes and other wastes, adopted in March 1994 by the Second Meeting of the Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, in which the Conference requested the secretariat of the Basel Convention to explore the possibility of cooperation with ICPO/Interpol in cases of illegal traffic in hazardous wastes and other wastes;

(b) Criminal law in international environmental conventions (including the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, the Convention on International Trade in Endangered Species of Wild Fauna and Flora[31] (1973), and the United Nations Convention on the Law of the Sea); and the examination and evaluation of national laws, in particular:

(i) The potential for and existence of criminal provisions in international environmental conventions;

(ii) The implementation of criminal provisions from international conventions in national legislation to assess whether these laws are sufficiently harmonious to satisfy the "double criminality" threshold for extradition and mutual assistance obligations;

(c) The development of a standard-setting manual for practitioners;

(d) Enhancement of the awareness of policy makers by organizing a parliamentary conference to promote the exchange of information on environmental legislation and to facilitate the introduction and implementation of such legislation;

(e) Comparative research on serious environmental crime, aimed at assessing and enhancing public awareness of the seriousness of deliberate acts involving pollution;

(f) Provision of technical assistance, in the form of advisory services (such as needs assessments and consultations);

(g) Organization of training courses for criminal justice and administrative agency personnel, who often lack the type of expertise and specialization in environmental protection needed to effectively carry out their work, including the provision of scientific and technical information on how to identify or detect various environmental offences; coordination with environmental protection agencies, environmental legislation, forms of cooperation between administration and courts; and the provision of examples of cooperation involving different types of government (for example, countries with a centralized ministry of environment and other systems for distributing responsibility);

(h) Development of guidelines facilitating compliance, including access to information and risk assessment, in order to enhance public awareness of how to respond to, as well to prevent, pollution incidents;

(i) Research on the effectiveness of regulatory and criminal justice action, including development of effectiveness indicators;

(j) Comparative study on the system of agencies to enforce environmental legislation, their organization and coordination and their mutual relationships.

Notes

[1]*Eighth United Nations Congress on the Prevention of Crime and the Treatment of Offenders, Havana, 27 August-7 September 1993: report prepared by the Secretariat* (United Nations publication, Sales No. E.91.IV.2), chap. I.

[2]Ibid., sect. C.2.

[3]See D. Chappell and R. Moore, *The Use of Criminal Penalties for Pollution of the Environment: A Selective and Annotated Bibliography of the Literature* (Ottawa, Department of Justice of Canada, 1989).

[4]See United Nations Interregional Crime and Justice Research Institute, *Selected Research Material*, forthcoming.

[5]See United Nations Interregional Crime and Justice Research Institute "Guidelines for the experts", *Environmental Protection at National and International Levels: Potentials and Limits of Criminal Justice: Case Studies*, forthcoming.

[6]United Nations Interregional Crime and Justice Research Institute, *Environmental Protection at National and International Levels: Potentials and Limits of Criminal Justice: Case Studies*, forthcoming.

[7]See *Environmental Protection and Sustainable Development: Legal Principles and Recommendations* (London, Graham and Trotman, 1987).

[8]See *Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992* (United Nations publication, Sales No. E.93.I.8 and corrigenda), vol. I: *Resolutions Adopted by the Conference*.

[9]G. Heine, "Elaboration of norms and the protection of the environment", *Protection of the Environment and Penal Law*, C. Zanghi, ed. (Bari, Cacucci, 1993), pp. 78-79.

[10]A. Alvazzi del Frate and J. Norberry, eds. *Environmental Crime, Sanctioning Strategies and Sustainable Development* (United Nations publication, Sales No. E.93.III.N.4), p. 11.

[11]See, for example, H. Lefèvre and H. Wattel, "Enforcement of environmental law in the Netherlands", *Criminal Law and the Environment*, H.-J. Albrecht and S. Leppä, eds. Publication Series No. 22 (Forssa, Finland, Helsinki Institute for Crime Prevention and Control, affiliated with the United Nations, 1992), pp. 112-126.

[12]K. Webb, *Pollution Control in Canada: the Regulatory Approach of the 1980s* (Ottawa, Law Reform Commission of Canada, 1988).

[13] Alvazzi del Frate and Norberry, *Environmental Crime, Sanctioning Strategies and Sustainable Development* ..., pp. 14-18.

[14]*Report of the United Nations Conference on Environment and Development* ..., resolution 1, annex II, para. 4.3.

[15]H. E. Daly, "Toward some operational principles of sustainable development", *Ecological Economics*, vol. 2, 1990, pp. 1-6.

[16]Saulwick Opinion Poll, *Sydney Morning Herald*, 12 April 1994.

[17]*Report of the United Nations Conference on Environment and Development* ..., resolution 1, annex II, chap. 27.

[18]*Report of the United Nations Conference on the Human Environment* (United Nations publication, Sales No. E.73.II.A.14 and corrigendum), chap. I.

[19]United Nations, *Treaty Series*, vol. 1302, No. 21623.

[20]See United Nations Environment Programme, *Convention on Biological Diversity* (Environmental Law and Institutions Programme Activity Centre), June 1992.

[21]United Nations, *Treaty Series*, vol. 1046, No. 15749.

[22]*Official Records of the Third United Nations Conference on the Law of the Sea* (United Nations publication, Sales No. E.84.V.3), art. 194.

[23]See UNEP/IG.80/3.

[24]United Nations, *Treaty Series*, vol. 327, No. 4714.

[25]Ibid., vol. 970, No. 14049.

[26]Ibid., vol. 973, No. 14097.

[27]*United Nations Convention on the Law of the Sea* ..., art. 227.

[28]Ibid., art. 230, para. 2.

[29]R. Brañes, *Institutional and Legal Aspects of the Environment in Latin America, Including the Participation of Non-Governmental Organizations in Environmental Management* (Washington, D.C., Inter-American Development Bank, 1991), p. 37.

[30]*Report of the United Nations Conference on Environment and Development* ..., resolution 1, annex I.

[31]United Nations, *Treaty Series*, vol. 993, No. 14537.

Annex

DRAFT PROGRAMME OF THE WORKSHOP ON THE TOPIC "ENVIRONMENTAL PROTECTION AT THE NATIONAL AND INTERNATIONAL LEVELS: POTENTIALS AND LIMITS OF CRIMINAL JUSTICE", TO BE HELD WITHIN THE FRAMEWORK OF THE NINTH UNITED NATIONS CONGRESS ON THE PREVENTION OF CRIME AND THE TREATMENT OF OFFENDERS

The two-day workshop on the topic "Environmental protection at the national and international levels: potentials and limits of criminal justice" will be held during the second week of the Ninth United Nations Congress on the Prevention of Crime and the Treatment of Offenders. It will consist of four three-hour meetings.

First day

Morning

1. Presentation of the position paper and discussion guidelines.

2. Results of the empirical study on pollution produced by small-scale industries and individuals.
   Discussion.

Afternoon

3. Large-scale enterprises.
   Discussion.

4. Transboundary pollution.
   Discussion.

Second day

Morning

5. Expert panel discussion on the topic "Environmental protection through criminal law: limits of individual responsibility - potentials of collective liability?".

Afternoon

6. Presentation of research: methodology and results of comparative studies in environmental issues.

7. International cooperation strategies.

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AND THE TREATMENT OF OFFENDERS

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CRIMINAL JUSTICE AND POLICE SYSTEMS: MANAGEMENT AND IMPROVEMENT OF POLICE AND OTHER LAW ENFORCEMENT AGENCIES, PROSECUTION, COURTS AND CORRECTIONS; AND THE ROLE OF LAWYERS

Background paper for the workshop on international cooperation and assistance in the management of the criminal justice system: computerization of criminal justice operations and the development, analysis and policy use of criminal justice information

Summary

The present background paper contains a review of current crime and justice issues in the area of computer-assisted criminal justice operations, including statistical and policy use of crime-related information. In particular, the paper deals with technical and related legal aspects of criminal justice management and with possible future directions of international cooperation in this area within the framework of the United Nations crime prevention and criminal justice programme.

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I. Draft programme of the workshop on the topic "International cooperation and assistance in the management of the criminal justice system: computerization of criminal justice operations and the development, analysis and policy use of criminal justice information", to be held within the framework of the Ninth United Nations Congress on the Prevention of Crime and the Treatment of Offenders 24

II. Provisional programme of the ancillary symposium on computerization of criminal justice information, to be held within the framework of the Ninth United Nations Congress on the Prevention of Crime and the Treatment of Offenders 26

INTRODUCTION

A. Legislative background

1. The Economic and Social Council, in its resolution 1993/32, endorsed the programme of work for the Ninth United Nations Congress on the Prevention of Crime and the Treatment of Offenders, including the holding of, *inter alia*, a two-day workshop on international cooperation and assistance in the management of the criminal justice systems: computerization of criminal justice operations and the development, analysis and policy use of criminal justice information. Upon the recommendation of the Commission on Crime Prevention and Criminal Justice at its third session, the Council adopted resolution 1994/19, in section IV of which it recommended that the workshop and the ancillary symposium on computerization should evaluate progress in computerization and the policy and management use of information. The Council also recommended that the workshop should consider controls and legal measures to safeguard respect for privacy and to prevent data from being used for purposes incompatible with the International Covenant on Civil and Political Rights (General Assembly resolution 2200 A (XXI), annex), bearing in mind data protection principles related to personal privacy.

2. The workshop and the symposium should provide a forum in which to discuss issues in the development and use of national and international crime and criminal justice information and in the introduction of information technology in the administration of criminal justice for policy makers responsible for the operation of criminal justice. They should also provide an opportunity for an exchange of expertise and experiences between government representatives, criminal justice administrators, criminal justice statisticians, practitioners in the criminal justice system, researchers, and experts on computerization.

3. The workshop is being coordinated by the European Institute for Crime Prevention and Control, affiliated with the United Nations,* together with the Ministry of Justice of the Netherlands, the United Nations Interregional Crime and Justice Research Institute (UNICRI), the Asia and Far East Institute for the Prevention of Crime and the Treatment of Offenders and the Office of International Criminal Justice at the University of Illinois at Chicago (for the draft programme of the workshop, see annex I). The symposium, which will deal with the computerization of criminal justice information, will feature podium presentations and a discussion of national experiences, as well as demonstrations of hardware and software applications in criminal justice (for the provisional programme of the symposium, see annex II). The workshop and the symposium will build on the results of the previous workshop on computerization, organized within the framework of the Eighth United Nations Congress on the Prevention of Crime and the Treatment of Offenders, held at Havana from 27 August to 7 September 1990.**

4. The workshop on computerization held at the Eighth Congress provided the first major opportunity to discuss issues related to computerization of the administration of criminal justice. The discussions resulted in the adoption by the General Assembly of resolution 45/109, on computerization of criminal justice. That resolution, *inter alia*, laid down a conceptual framework for a technical cooperation programme for the

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*Formally called the Helsinki Institute for Crime Prevention and Criminal Justice, affiliated with the United Nations (HEUNI).

**At the Eighth Congress, HEUNI, in cooperation with the Crime Prevention and Criminal Justice Branch of the Secretariat and national experts, organized a workshop on computerization of criminal justice information. The discussions at the Eighth Congress ultimately led to the adoption by the General Assembly of resolution 45/122, on criminal justice education, and to two publications (Richard Scherpenzeel, ed., *Computerization of Criminal Justice Information: Volume I*, HEUNI Publication Series, No. 19 The Hague, Ministry of Justice of the Netherlands, 1992); and Richard Scherpenzeel, ed., *Computerization of Criminal Justice Information: Volume II*, HEUNI Publication Series, No. 20 (The Hague, Ministry of Justice of the Netherlands, 1992)). The United Nations has published a *Guide to Computerization of Information Systems in Criminal Justice* (United Nations publication, Sales No. E.92.XVII.6), based on a report of the Secretary-General on computerization of criminal justice administration (A/CONF.144/14).

computerization of criminal justice with a plan of action for the United Nations that included four key elements:

(a) Reviewing and assessing national experiences in the computerization of criminal justice;

(b) Organizing regional and interregional meetings, seminars and workshops;

(c) Informing donor countries of the needs of recipient countries in terms of technical assistance in computerization of criminal justice administration;

(d) Establishing such a technical cooperation programme for the computerization of criminal justice administration and monitoring its activities (including the formulation of information programmes and statistics regarding crime and criminal justice).

5. One year later, in its resolution 46/152, on the creation of an effective United Nations crime prevention and criminal justice programme, the General Assembly approved the statement of principles and programme of action of the United Nations crime prevention and criminal justice programme annexed to that resolution. In paragraph 16 of the statement of principles, it is stipulated that the general goals of the programme should be to contribute to, *inter alia*, more efficient and effective administration of justice, with due respect for the human rights of all those affected by crime and all those involved in the criminal justice system.

6. Subsequent to the restructuring of the United Nations crime prevention and criminal justice programme, the Council, upon the recommendation of the Commission, adopted resolutions 1992/22 and 1993/34, in which it emphasized the need to strengthen the clearing-house facilities of the programme and to develop the infrastructural capacity to match the training needs of Member States with the available opportunities. In section IV of its resolution 1993/34, the Council requested the Secretary-General to report to the Commission, at its third session, on progress made in the improvement of computerization in criminal justice management, with emphasis on strengthening national capacities for the collection, collation, analysis and utilization of data.

7. The Commission, in its resolution 3/3, recalling General Assembly resolution 45/109, *inter alia*, called on Member States to provide promptly and accurately the statistical information requested for United Nations surveys on crime trends and to facilitate other international surveys sponsored by the United Nations on victims, offenders, criminal justice operations and crime prevention. In the same resolution, the Commission called on Member States, interregional and non-governmental organizations and the private sector to assist the Secretary-General in establishing an ad hoc group of experts on computerization of criminal justice information, with a view to advising him in developing computerization projects dealing with training and funding, as well as the evaluation of such projects. In addition, the Commission requested Member States to give serious consideration to strengthening the information management functions of the United Nations crime prevention and criminal justice programme, including technical cooperation programmes on computerization, and to provide technical and financial assistance to the development of related projects. The General Assembly, in its resolution 45/109, requested the Secretary-General, in cooperation with the network of United Nations institutes for the prevention of crime and the treatment of offenders, to establish a technical cooperation programme for the systematization and computerization of criminal justice in order to offer training, assess needs, formulate and execute specific projects, and to report on the results achieved to the Ninth Congress.

B. Substantive background

8. Criminal justice systems cannot be managed effectively without knowledge and detailed monitoring of (a) the factors underlying the development of crime and (b) the operation of the criminal justice agencies.

Such monitoring is impossible in the absence of reliable and expedient information. Strategic planning, policy development and evaluation of all aspects of the criminal justice system and operational running of the agencies require such information. This implies a need to develop, maintain and properly utilize crime-related and criminal justice information.

9. An understanding of the factors underlying the development of crime and of criminal justice processes cannot be expected to unfold simply from the production and distribution of statistical data or from efforts to promote information technology. While these are of enormous importance they have to be placed within a strategy involving the implementation of credible and effective crime prevention and criminal justice policy based on community expectations, human and financial resources and the operational potential of the system. Therefore, the strategic approach requires fruitful utilization of international experiences and modern research and potential processing techniques and infrastructure, taking into consideration community needs and priorities.

10. The 1990s are a period of enormous opportunity and challenge for the administration of criminal justice. Information technology has the potential to greatly increase the efficiency and effectiveness of the police, prosecution services, the courts, corrections and other criminal justice agencies by providing a wealth of information-processing services, solutions to management problems and assistance in preventing crime and in bringing offenders to justice. Advanced information systems have the potential to help criminal justice authorities anticipate and deal with crime control and criminal justice problems as they develop.

11. Computer-stored criminal justice information, however, yields personal data that, if not properly safeguarded, could endanger the privacy of citizens. Moreover, faulty techniques used in gathering or analysing information can undermine decision-making or policy planning. Therefore, legislators should clearly define standards for the collection, maintenance and dissemination of information by criminal justice agencies.

C. Issues for discussion

12. The following elements could be reviewed during the workshop on international cooperation and assistance in the management of the criminal justice system: computerization of criminal justice operations and the development, analysis and policy use of criminal justice information:

(a) Benefits of computerization;

(b) Prerequisites for improved management of the criminal justice system and the necessary controls and legal safeguards;

(c) The use of criminal justice information in management and policy formulation: selected examples from jurisdictions in both developed and developing countries;

(d) Issues in international cooperation, including communications and the exchange of information, surveys in crime prevention and criminal justice, training and education, and needs assessment;

(e) Exploration of modalities for United Nations technical cooperation activities in the area of computerization and the use of criminal justice information in policy-making.

I. BENEFITS OF COMPUTERIZATION

13. The need to introduce computer-based information systems tends to arise as a result of three problems. First, the sheer volume of information collected by manual information systems makes it more and more difficult to provide timely and accurate information. As the volume of criminal cases increases, manual record-keeping becomes increasingly less cost-effective. Two types of problems are likely to arise: backlogs will develop and the information recorded in the manual system will be inaccurate and out of date; and the pressure of coping with the increasing tide of information will increase the potential for error. Placing incorrect information in the hands of both administrative and operational personnel increases the likelihood of undesirable policy or operational decisions. Reducing the resulting costs to the system and to society is one of the primary benefits of computerization.

14. Secondly, as society and the nature of crime grow more complex, the structure of the data required to properly administer the criminal justice system becomes more complex as well. These complexities soon overwhelm the abilities of manual systems and even those of rudimentary computer-based systems. To properly investigate the more complex crimes found in society today and to more efficiently allocate scarce criminal justice system resources, administrators require more information about criminal events. The way the information is used changes over time. Instead of using simple statistics, such as those based on event counts, administrators can analyse the data in a more intensive manner using statistical models. In addition, new and more powerful graphical and spatial forms of analysis can be employed. Those methodologies require data speed, accessibility and dimensionality that manual systems cannot provide.

15. Thirdly, the need for administrators and organizations to share data increases as the scope and complexity of crime increase. Much of the data collated in a typical criminal justice information system may be useful to many organizations in the same government. This presents two problems: the data are collated many times, with all the inherent unnecessary costs of redundancy; and that introduces the potential for inconsistency since the data may be generated at different times and may be measured in different ways, even though the underlying concept, that of measuring the performance of the criminal justice system, is the same. Both situations can create problems for criminal justice administrators.

16. Offenders do not necessarily confine their activities to a single jurisdiction. Thus, there are increasing needs and opportunities to share information across jurisdictional or national boundaries. As in all of the other cases the value of information varies with its timeliness. While conceptually it is possible to share information even between manual systems, the timeliness and accuracy of such information is suspect, and consequently so is its value. In the final analysis manual systems can provide little of the functionality required for effective and efficient information-sharing.

II. PREREQUISITES FOR IMPROVING THE UTILIZATION OF INFORMATION IN THE MANAGEMENT OF THE CRIMINAL JUSTICE SYSTEM

17. Contemporary innovative information technologies, when carefully designed, developed and implemented, can increase the efficiency of law enforcement agencies, prosecution, courts and correctional services in the management of the increasingly complex criminal justice system and can help criminal justice authorities to anticipate and deal with crime control and criminal justice problems as they develop.

18. There are many successful systems that yield considerable benefits. At the same time, many other projects have failed to reach fruition or have proved to be costly and ineffective. The design and operation of information systems generally require extensive resources. Because of such cost considerations, senior and executive management in criminal justice administrations and even legislators must be involved in the planning of criminal justice information systems from the vert beginning. Moreover, senior management has

a sufficiently broad view of the overall objectives of the criminal justice process and ultimately is responsible for deciding the uses, features and limitations of information systems, as well as the relative priorities of those systems among various programmes competing for limited resources. Senior management must be fully cognizant of the potential benefits and inherent costs and risks of the systems. Therefore, the basic prerequisite for introducing computerization in the administration of criminal justice is the involvement of senior and executive management, as noted in a report of the Secretary-General on progress made in the improvement of computerization in criminal justice management, with emphasis on strengthening national capacities for the collection, collation, analysis and utilization of data (E/CN.15/1994/3, para. 7). The scope of the computerization project will to a large extent determine the most appropriate persons to play this role. As the scope expands, the responsibility and authority of the persons required for successful implementation and operation of the system will also increase.

19. The workshop may wish to consider a number of issues that are critical to the success of an information system. The first issue that it may wish to consider, one that is most critical, is the clear establishment of the scope and scale of the system so that they are consistent with the requirements and resources of the organization in question. Those dimensions need to be established by undertaking a needs assessment study.

20. The needs assessment study has two fundamental objectives: to determine whether there is a need for computerization within the organization in question, and, if there is a need, to decide on the scope or extent of the computerization.* The achievement of both objectives is crucial. If computerization in the administration of criminal justice is initiated without first conducting a needs assessment, it is almost certain that it will fail to have the desired effect and that the costs will exceed the benefits. An additional drawback is that future computerization projects may well be looked upon unfavourably. If the scope or extent of computerization projects is too broad or too narrow, either the costs will not correspond with the benefits or the benefits that could have been gained at little additional cost will be lost. A thorough needs assessment study may even show that computerization in certain areas is not necessary, or that the problems noted could be resolved by reorganizing the structure of the criminal justice agency in question.

21. The needs assessment study should identify projects that have a high probability of success and whose potential benefits substantially outweigh their costs. It should be based on an open dialogue between experts in computerization in criminal justice and the future participants in the system, including policy makers, criminal justice administrators and the end-users of the system. The study should be conducted in the environment in which the system is to be deployed.

22. Once the needs assessment study has determined the purpose of computerization and has indicated its direction, the next step in the planning process should be to develop an overall strategy that will:

(a) Clearly identify the goals and objectives of the organization as a whole;

(b) Define the information needs of the organization as a whole and of the component parts of the organization;

(c) Identify the impact of information on the way the organization works, in order to determine factors that may critically affect the achievement of the objectives;

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*Within the terms of reference of the United Nations programme on the computerization of criminal justice information (see General Assembly resolution 45/109), on the basis of the needs assessment, external resources can be sought and deployed for activities that are most needed within the overall justice programme of the country and for which there are insufficient government resources.

(d) Clearly specify how computerization can help the organization to improve the flow of information.

23. In developing the strategy, consideration should be given to the merits of proceeding with a comprehensive criminal justice information system, in contrast to a series of independent, function-specific systems (police, courts, corrections etc.). In addition, the costs and benefits of building a custom-designed system, as opposed to transferring technology from elsewhere, or tailoring packaged systems, should be examined. Since the organization, and even perhaps its structure, is likely to be affected, top management must play a significant role both in the needs assessment exercise and in developing the strategy.

24. The second issue that the workshop may wish to consider is the resources involved. There must be sufficient resources available not only to construct but also to maintain the system once it becomes operational. All too often the cost of constructing information systems is underestimated and the resources required to keep the system running are completely ignored. The result is that the original design of the project is reduced and there is a corresponding reduction in its benefits. Similarly, a system is likely to fall into disrepair if its scope is such that the cost and complexity of operating and maintaining it exceed the benefits received.

25. The human resources that are needed to operate and utilize the output of the system must be identified or developed. For all information systems there are implicit assumptions about the skill and training of the people who use, operate and maintain them. Those assumptions must be clearly specified so that the requirements of the system are met by those who will interface with it. Any gaps must be closed by developing and implementing training programmes or by altering the design of the system.

26. Furthermore, the physical structure necessary to support the technologies chosen for implementing the system must be functioning. The scope of the system, once it has been determined, frequently reveals implicit assumptions about the environment within which the system will operate.*

III. PURPOSE AND FUNCTIONAL REQUIREMENTS OF CRIME-RELATED AND CRIMINAL JUSTICE INFORMATION**

27. The main purpose of having criminal justice information is to create conditions for making informed decisions related to crime prevention and criminal justice. Planning, monitoring and evaluation should rest on comprehensive, reliable and timely data that must be purposefully produced, processed, analysed, utilized and made available to the public. Such data are needed:

(a) To keep planners of criminal justice policy informed, increasing the accuracy of predictions about crime rates and crime trends, costs, personnel requirements, demand for services etc.;

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*Such as the availability, reliability and quality of power and telecommunications. Any special requirements of the technology employed, such as temperature, humidity and air quality, should be known from the outset.

**This subsection is based on Sange de Silva, "Purpose of developing national criminal justice information mechanisms", Richard Scherpenzeel, Wang Lixian and Ugljesa Zvekic, eds., *Development and Policy Use of Criminal Justice Information: Proceedings of the Beijing Seminar*, UNICRI Publication No. 53 (Rome/The Hague), forthcoming; Sange de Silva, "Functional requirements of a system of criminal justice information", Richard Scherpenzeel, Wang Lixian and Ugljesa Zvekic, eds., *Development and Policy Use of Criminal Justice Information: Proceedings of the Beijing Seminar*, UNICRI Publication No. 53 (Rome/The Hague), forthcoming; and Donald J. Weatherburn, "Policy uses of criminal justice information: a New South Wales perspective", Richard Scherpenzeel, Wang Lixian and Ugljesa Zvekic, eds., *Development and Policy Use of Criminal Justice Information: Proceedings of the Beijing Seminar*, UNICRI Publication No. 53 (Rome/The Hague), forthcoming.

(b) To identify problem areas of common concern to different levels and sectors of government (for example, in order to initiate adequate local and national policies and programmes);

(c) To assess the impact of legislative and policy changes (for example, to ensure that those changes have the intended effects);

(d) To provide a basis for planning resource allocation, for monitoring, evaluating and controlling performance and service delivery (for example, in order to determine when to increase or decrease the level of investment in law enforcement and criminal justice, or to reduce inconsistencies in policy in different sectors of a criminal justice system).

28. Apart from the above-mentioned purposes, which are government-oriented, another important purpose, public accountability, stands out. It consists of components such as the following:*

(a) Informing the public about crime and government responses to crime, including data on how citizens are dealt with by the justice system;

(b) Making available indicators on governmental spending on crime and the administration of criminal justice and related efficiency, effectiveness and fairness;

(c) Providing international comparisons;

(d) Promoting rational public debate about crime and criminal justice.

29. In addition, there are other persons in the academic and research community who might use criminal justice information to advance knowledge and understanding of the relationship between crime, responses to crime and other social policies and between crime and social change or development.

30. Criminal justice programmes face the challenges of competing needs and interests usually in an environment of limited resources and changing and expanding demands. Therefore, a solid management process is needed to establish, confirm or change strategic direction; to verify and modify users requirements; determine priorities; to develop strategies for allocating resources; and to establish and review, if needed, procedures for monitoring, evaluating and controlling operational planning and adjustment of the strategic programme.

31. Experts in crime prevention, victimization and criminal justice policy, programmes and administration must play key roles in designing the statistical projects and series, in determining concepts and definitions, in planning and conducting analysis and in preparing recommendations. Highly specialized personnel is an important requirement for the development, operation and strategic use of a criminal justice information system.

32. There is a broad array of technology designed to improve the administration of justice. In some cases, however, the application of such technology may be severely limited or may not be cost-effective if it is employed in an inappropriate environment. At the same time, many national and local criminal justice authorities with limited resources are struggling to meet a growing number of demands. The situation is

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*See also the report of the Secretary-General on progress made on the fourth and fifth surveys of crime trends and operations of criminal justice systems, and other initiatives under way to acquire, process and distribute crime prevention and criminal justice data (E/CN.15/1994/2, paras. 4-5).

particularly acute in developing countries, which may have difficulties producing even basic criminal justice statistical data. Therefore, within the context of current resource constraints, criminal justice administrators need to deal with priority computerization needs first and to identify the right technologies for solving the problems they are facing.

33. Any planning of criminal justice information systems should take into account the fact that there are four distinct types of such systems:

(a) In archival information storage systems, pieces of information are stored for later retrieval and analysis. Such systems may include criminal history record systems, stolen motor vehicle registries, crime-related statistical systems and demographic statistical systems;

(b) Tactical information systems, through which relevant information is gathered from various sources, including archival systems, and is analysed to support decisions on tactics for dealing with specific situations: typical uses of tactical information systems include the provision of data needed to make pretrial detention decisions and sentencing decisions, to plan investigations and to execute planned arrests;

(c) Case management systems, which are designed to support the operations of the prosecution and the courts: such systems cover all aspects of case monitoring (such as case and defendant tracking, case inquiry, the status of the case proceedings, or court scheduling) and the generation of documents, notices and caseload and operational statistics;

(d) Strategic information analysis systems, through which a broad spectrum of information is gathered and analysed to detect trends and conditions in an environment: strategic information can be used to support the planning of law enforcement strategies, programmes and general resource deployment, and to evaluate the success of existing programmes; examples include the analysis of trends in crime rates and in the sociocultural profile of a community.

34. The ease with which offenders cross jurisdictional borders and with which criminal organizations spread their activities over several States illustrates the importance of information-sharing and coordination between different Member States and between different levels of government. Such international cooperation between law enforcement agencies already exists in some regions, most notably in southern Africa, Europe and North America. Jurisdictions that are planning information systems should take into account information-sharing needs and seek, whenever possible, to coordinate their systems planning with other jurisdictions. On the national level, systems planning must also seek to achieve compatibility of information collection and reporting formats among jurisdictions. Such compatibility could facilitate information-sharing and reduce costs.

35. In some cases, various agencies within a single governmental jurisdiction each maintain separate information systems that are designed and implemented to meet their particular needs.* Although the overall information needs of different agencies may vary, separate agencies may have some similar or shared information needs. Therefore, policy makers should seek government-wide, coordinated inter-agency planning of the development of information systems. Such coordinated development should seek to eliminate unnecessary duplication of effort, to consolidate or integrate separate information systems when feasible and to ensure the compatibility of separately maintained information systems.

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*Portions of this text are based on National Criminal Justice Association (United States of America), "Policy statement", 3 June 1993.

36. Regarding further efforts to promote international cooperation, particularly among developing countries,* experience indicates that:

(a) An understanding of the factors underlying the development of crime and criminal justice processes does not unfold simply from the production and distribution of information;

(b) Before introducing advanced technology, it is necessary to have a clear understanding of the purposes of criminal justice information systems and the requirements for its proper operation, maintenance and development;

(c) The value of a criminal justice information system is directly linked to the reliability of the information that it provides.

IV. CONTROLS AND LEGAL SAFEGUARDS

37. The accuracy, completeness and timeliness of information in criminal justice databases is of paramount importance. Criminal justice personnel rely on the databases to make decisions that considerably affect individuals and public safety. In a number of countries, businesses and private organizations may also rely on government databases, such as criminal history record systems, to assist them in making decisions regarding employment, financial matters or volunteer appointments. Inaccurate, outdated or otherwise misleading information could threaten the privacy of individuals.

38. In the performance of their legitimate duties, criminal justice authorities compile sensitive personal information about individual citizens. Inappropriate use of that information constitutes a violation of personal privacy. This raises the question of the provision of appropriate legal protection of such privacy, as provided for under article 17 of the International Covenant on Civil and Political Rights (General Assembly resolution 2200 A (XXI), annex) and in accordance with the guidelines for the regulation of computerized data files (E/CN.4/1990/72), adopted by the General Assembly in its resolution 45/95. Therefore, in the design and operation of information systems, all possible steps must be taken to ensure the security and proper use of personal information.

39. The privacy and security interests of citizens must be considered carefully throughout information system planning. The information gathered in criminal justice information systems should be limited strictly to those types of information that are truly necessary for legitimate criminal justice purposes. Clear policies must also be established limiting the access to and the use and dissemination of sensitive personal information in order to prevent invasive or illicit uses of that information. In addition, agencies responsible for such information systems should promulgate administrative regulations that set forth specific standards for the inclusion or exclusion of certain types of information; guidelines for analysing the information contained in the system and making inferences from it; standards for securing and disseminating personally identifiable information; standards for the dissemination of reports produced through the system; and a procedure by which aggrieved persons or organizations who have been publicly identified by the system may challenge the accuracy of the information released by it.

40. The greater use of computers in society as a whole, and not only within the criminal justice system, has drawn attention to computer-related crime. The issues involved in such crime are dealt with in the United Nations manual on the prevention and control of computer-related crime,[1,2] which was drafted at the initiative and with the support of the Government of Canada.

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*See also section VIII below.

V. INTERNATIONAL COOPERATION AND ASSISTANCE IN THE COMPUTERIZATION OF CRIMINAL JUSTICE OPERATIONS AND IN THE DEVELOPMENT, ANALYSIS AND POLICY USE OF CRIMINAL JUSTICE INFORMATION

41. International cooperation has significant potential in facilitating efforts by Member States to solve their problems in computerization and to develop, analyse and use criminal justice information. First, despite differences that may exist in the cultural, economic, political and social context of computerization issues, Member States can learn from the successes and failures of other Member States in responding to the problems. Secondly, international cooperation provides a learning experience for both the provider and the recipient of the assistance. Thirdly, work in this field may help, for example, neighbouring countries in preventing and controlling crime that could otherwise cross national borders or may facilitate the exchange of information for coordinating activities aimed at preventing and combating transnational organized crime. Finally, in many cases the problems in this field are so vast that they exceed the capacity of Member States to provide an effective response.

42. International cooperation involves a number of different actors, including individual Governments, the United Nations, intergovernmental and non-governmental organizations, governmental agencies, national and even local professional and scientific associations, academic institutions, private enterprises and individuals.

43. Experience with international cooperation projects has shown the need for careful planning.[3] All the parties must have a clear idea of the objective of each stage in the project in question and of the obligations of each party. Because of the importance of securing a sufficient degree of support and coordination at all levels, the project should always be designed and carried out at the invitation of the authorities of the recipient country and should be integrated into the overall development plan of the country.

44. The ideal project would have a multiplier effect in that the model used could be used elsewhere in the recipient country or in other countries (after being altered to fit local circumstances). The project should include arrangements for ensuring follow-up and evaluation.

VI. TECHNICAL COOPERATION ACTIVITIES IN THE COMPUTERIZATION OF CRIMINAL JUSTICE OPERATIONS AND IN THE DEVELOPMENT, ANALYSIS AND POLICY USE OF CRIMINAL JUSTICE INFORMATION CARRIED OUT WITHIN THE FRAMEWORK OF THE UNITED NATIONS CRIME PREVENTION AND CRIMINAL JUSTICE PROGRAMME SINCE THE EIGHTH UNITED NATIONS CONGRESS ON THE PREVENTION OF CRIME AND THE TREATMENT OF OFFENDERS

A. Communications and the exchange of information

45. One way to provide international assistance, especially to countries that are just beginning to computerize the administration of criminal justice, is to develop guidelines and manuals such as the *Manual for the Development of Criminal Justice Statistics*[4] and the *Guide to Computerization of Information Systems in Criminal Justice*.[5]

46. The European Institute for Crime Prevention and Control, affiliated with the United Nations, has taken an important step for the exchange of information about criminal justice computer applications by publishing the *Directory of Criminal Justice Information Systems*.[6] The *Directory* is a valuable reference that enables a Member State to quickly determine which States in its region or elsewhere have developed systems to deal with problems similar to its own.

1. United Nations Crime and Justice Information Network

47. One of the powerful mechanisms for improving communication between Member States is the United Nations Crime and Justice Information Network (UNCJIN), a computer network established in pursuance of Economic and Social Council resolution 1986/11 to facilitate the exchange of information among criminal justice policy makers, professionals and researchers around the world. UNCJIN encompasses three basic dimensions: an electronic mail facility, databases and access to other computer networks and their databases and services.

48. UNCJIN operates on Internet, one of the world's largest computer networks, with nearly 30 million members. Through Internet, UNCJIN has developed its own electronic discussion group of about 500 participants, who exchange views on current crime and justice issues. By facilitating the crossnational exchange of information and ideas, UNCJIN provides the international community with an important service, which for three years was financially supported solely by the Bureau of Justice Statistics of the United States Department of Justice and in the current fiscal year has, in addition, been supported by the National Institute of Justice, of the same Department. At the initiative of the Crime Prevention and Criminal Justice Branch, and as UNCJIN will be transferred to the Branch, a larger information project involving technical assistance from the National Institute of Justice is being considered. The project, tentatively named "United Nations Online Crime and Justice Clearing-house", would utilize a search and communication programme known as "World Wide Web" to relay crime-related data to and from Governments via the Branch and the institutes comprising the United Nations crime prevention and criminal justice programme network. A prototype of this computerized programme will be demonstrated at the Ninth Congress. The current and future dimensions of the information project are discussed in an addendum to the present report (A/CONF.169/13/Add.1).

2. Crime surveys

49. The quantitative comparative analysis of crime information across societies has a long history. In the past, however, there was much less discussion on the potential than on the limitations of crime surveys.

50. In academic circles and in the United Nations, more attention has been paid to reporting quantitative rather than descriptive or qualitative information, in particular, official data on criminal justice administration. Only more recently has greater interest been shown on victim data and non-official offender information at the international level.* Moreover, efforts have been made at the international level to collect and analyse data on crime in which organizations were the victims or offenders.**

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*In addition to the international crime (victim) survey, an international self-report delinquency study was initiated in 1990 under the aegis of the Research and Documentation Centre of the Ministry of Justice of the Netherlands. The study involved Belgium (Liège), Germany (Mannheim), Greece (Athens), Netherlands, New Zealand (Dunedin), Portugal, Spain and United Kingdom of Great Britain and Northern Ireland (England and Wales; and Northern Ireland (Belfast)). School samples were drawn from Finland (Helsinki), Italy (Genoa, Messina and Siena) and the United States of America (Omaha). Data were collected through face-to-face interviews or self-administered questionnaires or a mixture of the two. The results were published in Josine Junger-Tas, Gert-Jan Terlouw and Malcolm W. Klein, eds., *Delinquent Behaviour among Young People in the Western World* (New York, Kugler Publications, 1994).

**One example is the international survey of crimes against businesses, coordinated by the Ministry of Justice of the Netherlands, the Home Office of the United Kingdom and the Australian Institute of Criminology. Pilot studies were carried out in 1993 in the Netherlands and the United Kingdom and a full-fledged survey was carried out in Australia. The survey is currently being conducted in France, Germany, Indonesia, Italy, Netherlands, South Africa, Spain, Switzerland and United Kingdom.

3. United Nations surveys of crime trends and operations of criminal justice systems

51. For more than three decades, United Nations efforts in the area of crime surveys have focused on promoting the United Nations surveys of crime trends, operations of criminal justice systems and crime prevention strategies. The main objectives of the surveys have been:

(a) To promote informed decision-making in the administration of criminal justice, nationally and crossnationally;

(b) To stimulate Member States to develop their own systems of criminal justice information;

(c) To provide institutions and experts with criminal justice statistics and hypotheses for special research with a view to improving the effectiveness of programmes to reduce and control crime;

(d) To provide Member States with an overview of, and an opportunity to study, the interrelationship between various parts of the criminal justice system.

52. In pursuance of General Assembly resolution 3021 (XXVII), the Secretariat carried out the first worldwide survey of crime trends, covering the period 1970-1975. Since then, three additional surveys have been carried out, covering the periods 1975-1980, 1980-1986 and 1986-1990. A fifth survey, covering the period 1990-1992, is being prepared.

53. The increasing importance of world crime surveys, the propensity and capacity of countries to participate and improvements in the methodology used are revealed by the number of replies received from countries or territories. A total of 64 countries or territories submitted replies for the First Survey. That number totalled 80 for the Second Survey and 78 for the Third Survey. For the Fourth Survey, 98 countries or territories had sent replies as of 15 November 1994. The number of countries or territories that submit replies varies depending on the region, type of crime and particular aspect of the criminal justice system. Not all of the returned questionnaires provide complete statistical data, a fact that restricts the scope of some forms of data analysis.

54. In general, the United Nations surveys have revealed that police and prison data are the most widely available and the easiest to provide at the international level, particularly in developed countries, while the least available data have included data on resources of the criminal justice system and on characteristics of the persons processed in the system. The fact that in most societies an increase in crime has been coupled with an increase in policing and corrections calls in question the common reliance on repression to curb crime. It appears that, after all, most societies still rely on repressive strategies, despite advances made in crime prevention and non-custodial measures. Consequently, even if there has been no clear levelling out between developed and developing countries, North and South, in terms of the types of crime, there has been such a levelling out in terms of traditional responses to crime. To the costs of official reaction should be added those of private sector control. The United Nations surveys constitute an important tool for advancing the development of national criminal justice information systems in that they facilitate informed decision-making in the administration of justice.

55. More details on the results of the Fourth Survey will be made available at the workshop in an interim report by the Secretariat (A/CONF.169/15)* and in the regional reports by the institutes.

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*The interim report refers to publications and other documents based on the results of global and regional analyses of earlier surveys. Those publications and other documents will be listed in a conference room paper. Furthermore, the Crime Prevention and Criminal Justice Branch and UNICRI plan to publish the first report on crime and justice in the world, pursuant to the Economic and Social Council resolution 1992/22, section I, in which the Council called for the surveys to be conducted on a biennial basis.

4. International crime (victim) survey

56. An essential goal of criminal policy is to increase the safety and security of the community, persons and property. Victim surveys may indicate the extent to which criminal policy is achieving its objectives; or they may indicate why those objectives are not being achieved.

57. Victim surveys have been carried out for several years in a small number of developed countries; however, almost none have been conducted in developing countries or in countries in eastern or central Europe. The potential of victim surveys in making comparisons led to the first and second international crime (victim) surveys being carried out in 1989 and 1992 under the coordination of an international working group.* The main objectives of the international crime (victim) survey are as follows:

(a) To promote a crime prevention community and victim-centred strategy in line with the policy recommendations of the United Nations crime prevention and criminal justice programme;

(b) To promote the systematic collection of accurate and reliable information as a basis for the development of rational policies and their analysis and evaluation;

(c) To promote research and policy use of the victimization surveys at the local, national and international levels;

(d) To promote international comparative research;

(e) To provide technical cooperation projects;

(f) To provide internationally comparable crime and criminal justice databases.

58. Although the international crime (victim) survey has limitations, it offers an alternative means of comparing statistics on offences recorded by police and tends to reflect the amount of crime that victims and bystanders draw to the attention of the police and to analyse differences in police procedures as regards what offences are counted and how they are counted. It also offers a better comparative methodology than independently organized national victim surveys, where differences in design seriously compromise comparisons.

59. The results of the international crime (victim) survey indicate that crime is a heavy burden to many people; for instance, over one in five persons experienced in the previous year at least one incident of theft or damage to their property or some form of aggressive behaviour. The levels of actual risk are far from negligible, even though in some cases and in some countries the consequences are cushioned by insurance schemes, social welfare or family and/or community care.

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*The international crime (victim) surveys, which were coordinated by UNICRI and the Ministry of Justice of the Netherlands, involved Argentina (Buenos Aires), Australia, Belgium, Brazil (Rio de Janeiro), Canada, China (Beijing), Costa Rica, former Czechoslovakia, Egypt (Cairo), Estonia, Finland, France, Georgia, Germany, Greece (Athens), India (Bombay), Indonesia (Ambon, Jakarta, Manado, Medan, Palembang, Pandang, Pontianak, Surabaya and Ujung), Italy, Japan, Netherlands, Norway, Papua New Guinea (Goroka, Lae and Port Moresby), Philippines (Manila), Poland, Republic of Korea (Seoul), Russian Federation (Moscow), Slovenia (Ljubljana), South Africa (Johannesburg), Spain, Sweden, Switzerland, Tunisia (Tunis), Uganda (Kampala), United Kingdom, United Republic of Tanzania (Dar es Salaam) and United States. The results of the first international crime (victim) survey were published in J.J.M. van Dijk, P. Mayhew and M. Killies, *Experiences of Crime across the World* (Deventer, Netherlands, Kluwer, 1991). The results of the second international crime (victim) survey appeared in A. Alvazzi del Frate, U. Zvekic, and J.J.M. van Dijk, eds., *Understanding Crime: Experiences of Crime and Crime Control*, UNICRI Publication No. 49 (United Nations publication, Sales No. E.93.III.N.2).

60. The results of the international crime (victim) survey help put local crime problems in a broader, international perspective. In many countries the public view is probably that crime is a national plague for which local shortcomings are to be blamed. There may well be little awareness that other countries with Governments of political orientations and/or with different social infrastructure face similar problems. Moreover, the results of the survey dismiss the notion of high crime rates being unique to just a few select developed countries. Indeed, many countries suffer from a high level of property and violent crime, particularly in urban areas. It should be pointed out that the results of the international crime (victim) surveys need to be viewed in the context of other studies and information related to crime-generating and crime-reducing processes.

B. Training and education

61. Since the Eighth Congress, the Asia and Far East Institute for the Prevention of Crime and the Treatment of Offenders has organized three regional workshops on computerization of criminal justice information as part of its international training programme:

(a) The first workshop, held from 5 to 12 November 1991, for the 28 participants from 16 countries in the international training course on the theme "Effective and innovative countermeasures against economic crime";*

(b) The second workshop, held from 26 October to 6 November 1992, for the 29 participants from 16 countries in the international training course on the theme "Quest for effective methods of organized crime control";

(c) The third workshop, held from 1 to 8 June 1994, for the 25 participants from 16 countries in the international training course on the theme "Effective treatment of drug offenders and juvenile delinquents".

62. The participants in the workshops were practitioners in various fields of criminal justice administration. The workshops were conducted under the guidance of visiting experts in computerization of criminal justice information.

63. The workshops placed emphasis on the goals and objectives of computerization, as well as on the expertise essential to planning and implementation of computerization in criminal justice administration. They dealt with the technical aspects of information technology only as needed. They focused on a wide range of potential benefits that could be achieved at all stages of criminal justice proceedings - from law enforcement, the prosecution and the judiciary to corrections - by using appropriate computer applications. They also focused on key factors and guiding principles to be taken into account in introducing information technology in the criminal justice administration.

64. The workshops offered 16-20 hours of lectures and practical training and demonstrations of applications ranging from electronic mail network services to emerging technologies in criminal justice. The workshops were particularly significant since they exposed many participants for the first time to information on computerization with which criminal justice administrators should be familiar. The workshops were given high ratings by the participants in an evaluation conducted by the Asia and Far East Institute at the end of the training courses.

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*A compilation of the papers presented in the first workshop is being published in Richard Scherpenzeel, Edward C. Ratledge and Aaron Caplan, eds., *Computerization of Criminal Justice Information Systems*, UNAFEI Publication, 1991.

65. The curricula of the workshops, as well as the size of the classes and their composition (equal participation from the various agencies: law enforcement, prosecution, courts and correctional administration), proved to be ideal. The mixed composition of the classes led to an improved understanding among the participants of the need for inter-agency cooperation in introducing computerization in the administration of criminal justice (see the report of the Secretary-General on international cooperation and practical technical assistance for strengthening the rule of law: promoting the United Nations crime prevention and criminal justice programme (A/CONF.169/...)).

66. At the invitation of the Ministry of Justice of China, UNICRI organized and sponsored the Seminar on Development and Policy Use of Criminal Justice Information, which was held at Beijing from 12 to 16 September 1994. Participating in the seminar were representatives from the Ministry of Justice, the Ministry of Public Security, the Public Prosecutor's Office, the courts and academic and research institutions. In addition, participants were selected from among senior managers involved in the collection and analysis of criminal justice information.*

67. The Seminar resulted in the elaboration of the following proposals for follow-up activities within the framework of international cooperation: the organization of visits enabling Chinese officials and experts to study the criminal justice systems of other Member States; the organization of needs assessment missions to China, and the implementation of pilot projects, for example, on the tracking of court cases; the organization of training courses in data collection and data analysis, and the use of information technology in the administration of criminal justice; and exploration of the possibility of organizing a workshop on issues related to the development and use of criminal justice information for management and public utility.

68. Within the framework of the implementation of the 1992 international crime (victim) survey, UNICRI provided methodological advice and training related to the design, administration, analysis and reporting of the results of the survey to the participating developing countries.

C. Needs assessment

69. The European Institute for Crime Prevention and Control undertook several needs assessment missions at the request of the Governments of Bulgaria, Poland, the Russian Federation** and Slovenia.*** The Department of Development Support and Management Services of the Secretariat, in turn, funded needs assessment missions that were undertaken at the request of the Governments of Cuba and Nepal. The purpose of those missions was to determine the type of assistance that could be provided to national projects on the computerization of criminal justice management.

70. The needs assessment missions to Bulgaria and the Russian Federation resulted in the elaboration of the following proposals:

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*The proceedings of the Seminar are being published in Chinese and English by UNICRI in cooperation with the Ministry of Justice of China and the Ministry of Justice of the Netherlands (Ugljesa Zvekic, Wang Lixian and Richard Scherpenzeel, eds., *Development and Policy Use of Criminal Justice Information: Proceedings of the Beijing Seminar*, UNICRI Publication No. 53 (Rome), forthcoming). The results of the Seminar will be presented at the Ninth Congress in the workshop on international cooperation and assistance in the management of the criminal justice system.

**Carried out within the framework of the judicial reform of the Russian Federation.

***Undertaken in cooperation with the Ministry of Justice of the Netherlands.

(a) The organization of visits by senior executives and experts to study developments in the computerization of criminal justice information in other Member States;*

(b) The organization of management seminars on principles of computerization in the management of criminal justice;**

(c) The development of pilot projects in the areas of prosecution and tracking court cases and management systems.***

71. UNICRI, in cooperation with UNDP, carried out a project development mission in Papua New Guinea aimed at assisting in the development and coordination of crime and criminal justice information strategies and mechanisms, including the establishment of infrastructure such as a bureau of crime and justice statistics and the planning of local victimization surveys.[7]

VII. FUTURE DIRECTIONS OF INTERNATIONAL COOPERATION

72. The Ministry of Justice of the Netherlands, UNICRI, the European Institute for Crime Prevention and Control, and the Asia and Far East Institute for the Prevention of Crime and the Treatment of Offenders have contributed to the implementation of the technical cooperation programme for the computerization of criminal justice, pursuant to General Assembly resolution 45/109. However, only one expert has been made available for the implementation of the complex technical cooperation programme. That expert has been kindly provided by the Ministry of Justice of the Netherlands, at the request of the European Institute for Crime Prevention and Control.

73. Although priority has been given to the programme and there have been successful technical cooperation projects for many years, the United Nations has not yet established an appropriate infrastructure for the planning, implementation, monitoring and evaluation of such projects. The technical cooperation capacity of the United Nations crime prevention and criminal justice programme should be strengthened so that it may develop the infrastructure required to meet the needs of Member States. The development of infrastructure for international technical cooperation is essential to enabling Member States to benefit from the resources and knowledge gained from existing programmes and projects. Some of the components of that infrastructure are discussed below.

A. Expert group

74. The General Assembly, in its resolution 45/109, requested the Secretary-General to establish a group of experts to, *inter alia*, monitor the activities of the technical cooperation programme. The Eighth Congress, in its resolution entitled "Development of United Nations criminal justice statistical surveys",[8] requested the Secretary-General to appoint an ad hoc group of experts to advise him with respect to the design,

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*The Ministry of Justice of the Netherlands organized and funded study visits to that country for four senior executives and experts from the Office of the Prosecutor-General of Bulgaria from 2 to 7 October 1994 and for nine senior executives and experts from the Ministry of Justice, the Office of the Prosecutor-General and the Judiciary of the Russian Federation from 23 to 31 October 1994.

**The seminars, which are currently scheduled to be held in Bulgaria and in the Russian Federation at the beginning of 1995, are to be organized by the European Institute for Crime Prevention and Control and sponsored by the Government of Canada, the Government of the Netherlands, the United Nations Development Programme (UNDP) and the United States Agency for International Development.

***Fund-raising for the development of the pilot projects has been initiated. Consultations concerning funding are taking place with donor countries and international development aid agencies.

development, implementation and analysis of future United Nations crime and criminal justice statistical surveys. As there have been no funds to establish the above-mentioned groups of experts, the resolutions have not been implemented.

75. Extrabudgetary support would be required for the establishment of such expert groups. For instance, it might be possible to recruit high-level experts through arrangements similar to those worked out between the Ministry of Justice of the Netherlands and the European Institute for Crime Prevention and Control; or Member States might wish to participate in technical cooperation projects by seconding middle- and high-level computer and statistical staff. Such approaches would be in line with the programme priorities set out in General Assembly resolution 46/152, annex. The Economic and Social Council, in its resolution 1993/34, section IV, requested the Secretary-General to continue and to intensify efforts directed at the modernization of criminal justice techniques and administration, giving special attention to the needs of developing countries, including the introduction of compatible information technology to facilitate the administration of criminal justice and to strengthen practical cooperation on crime control between Member States. The Commission on Crime Prevention and Criminal Justice, in its resolution 3/3, called on Member States, interregional and non-governmental organizations and the private sector to assist the Secretary-General in establishing a group of experts on computerization of criminal justice information as envisaged in General Assembly resolution 45/109. In addition, UNICRI and the regional affiliate and associate institutes of the United Nations crime prevention and criminal justice programme might wish to host ad hoc expert group meetings to consider follow-up to General Assembly resolution 45/109.

76. Given current global fiscal restraints, alternatives to the establishment of two separate expert groups should be given careful consideration. An integrated expert group would have responsibilities related to the computerization and development of criminal justice information.

B. Roster of experts and directory of technical cooperation activities

77. Additional components of an infrastructure for international technical cooperation would include a regularly updated roster of individuals and organizations and a directory of technical cooperation activities undertaken by the United Nations and other international organizations. The directory should also be constantly updated to reflect the activities implemented and their sponsors.*

C. Needs assessment

78. The lessons learned from needs assessment missions undertaken in the areas of computerization of criminal justice operations and the development of criminal justice information systems suggest that, to be successful, needs assessment missions require thorough planning and preparation on the part of both the executing agency and the recipient. They also suggest that it is important to establish consistent and continuing political commitment at the executive and senior levels of government.** Each member State is responsible for establishing its own national priorities and if the Government is not committed to the development and use of criminal justice information mechanisms, little will be gained from need assessment missions and the recommended follow-up activities.

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*A related regional initiative, the computerized System of Information on Justice Administration (SIAJ), established by the Latin American Institute for the Prevention of Crime and the Treatment of Offenders, has already reached fruition. The participants of the ancillary symposium on computerization may wish to discuss SIAJ in more detail.

**See also the addendum to the report of the Secretariat on the computerization of the administration of criminal justice (A/CONF.144/14/Add.1).

D. Training and education

79. A major element in the introduction of computerization into the criminal justice system and the development and use of criminal justice information is education and training. Careful consideration needs to be given to questions such as who should be trained, when they should be trained in relation to the actual introduction of computerization, what aspects of information technology the various users need to learn and what methods will be used to train them. Each of the possible areas for training has a different target group:

(a) Training at the strategic level for policy makers;

(b) Training for managers who run the criminal justice information systems;

(c) Training of technicians in systems software, hardware, and data communication;

(d) Training of end-users of the computer applications.

80. Information is vital to each target group, but the type of information, the method by which effective training can be delivered, the type of person who must deliver the training, and the tools necessary for training will differ.

81. There must be a small cadre of well-trained professionals in the Member State in question who understand the advantages and disadvantages of introducing criminal justice information mechanisms; that will make it possible for the executive and senior levels of government to be properly briefed on the importance of making a consistent and lasting political commitment. It is important for the appropriate professionals to be properly trained in the planning and implementation of criminal justice information mechanisms. Those professionals will constitute the cornerstone of national efforts to develop and maintain such mechanisms.

82. Member States need to be able to turn to their own trained professionals for guidance on how to develop and maintain such mechanisms. Only then will the technical cooperation programme have achieved its goal of assisting Member States in establishing criminal justice information mechanisms for the administration of fair and efficient systems of justice. To obtain lasting results, special briefing sessions should be arranged for decision makers to enable them to translate the possibilities presented in the training seminars into actual technical cooperation projects.

83. The institutes cooperating within the United Nations crime prevention and criminal justice programme can play a leading role in providing such training. The European Institute for Crime Prevention and Control, in particular, has developed a curriculum for training seminars to acquaint senior criminal justice officials with computerization and with their key role in that process. The experience gained by that institute, UNICRI and the Asia and Far East Institute for the Prevention of Crime and the Treatment of Offenders in developing and conducting training seminars may serve as a basis for further work. If possible, comprehensive training projects should be included in the UNDP country programmes, as a way of augmenting national capacities and promoting sustainable development.

E. Participation in international efforts

84. The United Nations crime surveys and other international surveys are themselves important forums for international cooperation involving the exchange of information, the training of local professionals, and the dissemination of the results, both locally and internationally. Therefore, the proposed biennial crime trend surveys, as well as future international crime (victim) surveys, have the potential to contribute to the

development at the national level of infrastructure for data collection and analysis. And for that reason, major efforts should be made to provide technical assistance to countries in need of such support.

85. Another important modality of technical cooperation consists in providing opportunities for local professionals to participate in international conferences and information networks. That enables them to be informed of recent developments in the areas of criminal justice information, computerization, and research and statistical analysis, as well as to participate in the ongoing exchange of information at the international level. Interested parties are encouraged to become members in established networks and to develop informal contacts with experts in other countries through those networks.

F. Evaluation of technical cooperation projects

86. As with any other projects, it is important to provide for critical evaluation of the outcome of technical cooperation projects. Special attention needs to be given to the follow-up mechanisms of training courses and advisory missions. Training courses should also incorporate methodologies for the evaluation of data sources, surveys and the impact of technical cooperation projects, as well as the appropriateness of adopted or suggested computer applications. Evaluation and advisory missions to local agencies may prove useful in developing skills in data collection, processing and presentation.

VIII. CONCLUSIONS

87. The development of comprehensive criminal justice information systems and the computerization of the administration of justice for efficient, effective and equitable criminal justice and public security within the framework of international cooperation are facilitated by the following:

(a) A wealth of available expertise and opportunities to build upon;

(b) Increased willingness to promote the exchange of knowledge and experiences between countries, both developed and developing;

(c) Modern information technology, which assists administrators in making rational decisions and in exchanging information, including information on the value of new computing applications.

88. One of the most important challenges for the United Nations technical cooperation activities in the computerization and development of criminal justice information is to build and maintain the institutional capacity of the United Nations crime prevention and criminal justice programme to respond to requests from Member States for assistance in that field.

89. Future activities require more funding, more planning and more coordination within the framework of the United Nations crime prevention and criminal justice programme and more focused efforts in expanding funding and assistance to and from Member States, as well as collaboration with other United Nations entities, intergovernmental, governmental and non-governmental organizations and the private sector.

90. The United Nations funding agencies should include the development of criminal justice information mechanisms in their funding efforts and should cooperate with the United Nations crime prevention and criminal justice programme in planning and implementing relevant activities. The involvement of and close cooperation with the Department of Development Support and Management Services and UNDP are of the utmost importance. That requires making national planning offices and UNDP resident representatives more sensitive to the needs and possibilities of assistance in this field and to the priority accorded to them by United Nations policy-making bodies.

91. In addition to the involvement of the Department of Development Support and Management Services and UNDP, innovative partnerships to sponsor projects could be explored with the World Bank, the Organisation for Economic Co-operation and Development, the Council of Europe, regional development agencies, national development aid agencies and the private sector.

92. Technical cooperation may be financed by a loan that the receiving country is committed to repay. It may also be financed by a non-reimbursable grant, but even this form of financing will result in significant direct and indirect costs to the recipient. The donor agency may expect the recipient to make a counterpart contribution to the project (e.g. office space and equipment, hosting, salaries of local staff).

93. Suggestions on the components of the infrastructure of the United Nations crime prevention and criminal justice programme in the area of criminal justice information and computerization are aimed at increasing the capacity within the framework of the programme to effectively and efficiently plan, coordinate, fund, execute and evaluate projects. Only then can a systematic international cooperation scheme for Member States emerge. By helping to expand such collaboration, the workshop on international cooperation and assistance in the management of the criminal justice system may contribute to this increasingly important objective in North-South cooperation, at both the regional and subregional levels.

Notes

[1]*International Review of Criminal Policy*, Nos. 43 and 44, 1994 (United Nations publication, Sales No. E.94.IV.5).

[2]See also, Andrzej Adamski, ed., *Prawne Aspekty Nadużyć Popełnianych z Wykorzystaniem Nowoczesnych Technologii Przetwarzania Informacji: Materiały z Międzynarodowej Konferencji, Poznań 20-22 Kwietnia 1994/Legal Aspects of Computer-Related Abuse: Proceedings of the International Conference, Poznań, 20-22 April 1994* (Torún, Poland, Towarzystwo Naukowe Organizacji i Kierownictwa "Dom Organizatora", 1994).

[3]M. Joutsen, *International Co-operation: The Development of Crime Prevention and Criminal Justice in Central and Eastern Europe*, HEUNI Papers, No. 2, 1994.

[4]United Nations publication, Sales No. E.86.XVII.16.

[5]United Nations publication, Sales No. E.92.XVII.6.

[6]Richard Scherpenzeel, ed., HEUNI Publication Series, No. 25, forthcoming.

[7]U. Zvekic and D. Weatherburn, *Papua New Guinea: Crime and Criminal Justice Information*, UNICRI series Issues and Reports, No. 3, 1994.

[8]*Eighth United Nations Congress on the Prevention of Crime and the Treatment of Offenders, Havana, 27 August-7 September 1990: report prepared by the Secretariat* (United Nations publication, Sales No. E.91.IV.2), chap. I, sect. C.10.

Annex I

DRAFT PROGRAMME OF THE WORKSHOP ON THE TOPIC "INTERNATIONAL COOPERATION AND ASSISTANCE IN THE MANAGEMENT OF THE CRIMINAL JUSTICE SYSTEM: COMPUTERIZATION OF CRIMINAL JUSTICE OPERATIONS AND THE DEVELOPMENT, ANALYSIS AND POLICY USE OF CRIMINAL JUSTICE INFORMATION", TO BE HELD WITHIN THE FRAMEWORK OF THE NINTH UNITED NATIONS CONGRESS ON THE PREVENTION OF CRIME AND THE TREATMENT OF OFFENDERS

First day

Morning

1. Introduction: purpose of the workshop.

2. Changes since 1990 in computerization and the policy use of criminal justice information.

3. Benefits arising from the computerization of criminal justice.

4. Prerequisites for improved management of the criminal justice system.

5. Controls and legal safeguards.

   Discussion: questions and comments from participants

Afternoon

6. The use of criminal justice information in management and policy formulation:

   (a) Overview;

   (b) Selected examples from jurisdictions in both developed and developing countries;

   (c) Panel discussion.

Second day

7. Summary of the first day of the workshop and introduction to the second day.

8. Introduction to international cooperation: role and issues.

9. Communications and the exchange of information, including the United Nations Crime and Justice Information Network - present and future dimensions; towards the establishment of the United Nations Online Crime and Justice Clearing-house:

   (a) Progress report on the Fourth United Nations Survey, including regional reports;

   (b) Other surveys.

   Discussion: questions and comments from participants

10. Training and education.

11. Needs assessment projects.

    Discussion: questions and comments from participants

12. Exploration of modalities for the expansion of international technical cooperation activities in the area of computerization and the policy use of criminal justice information.

Annex II

PROVISIONAL PROGRAMME OF THE ANCILLARY SYMPOSIUM ON COMPUTERIZATION OF CRIMINAL JUSTICE INFORMATION, TO BE HELD WITHIN THE FRAMEWORK OF THE NINTH UNITED NATIONS CONGRESS ON THE PREVENTION OF CRIME AND THE TREATMENT OF OFFENDERS

The six-day ancillary symposium on computerization of criminal justice information will include podium presentations and a discussion on national experiences. The provisional programme of the symposium is as follows:

(a) Keynote papers;

(b) Papers by invited experts;

(c) Papers by delegations and representatives of technical aid agencies of donor countries;

(d) Papers by leading information technology companies.

The programme will feature discussions on topics such as:

(a) Existing criminal justice applications of information technology;

(b) Management tools, management issues and human factors;

(c) Emerging technologies;

(d) Interregional, regional or subregional policy orientation and training seminars;

(e) Bilateral and multilateral assistance in the design and implementation of computerization projects.

The four-day criminal justice computerization exhibition will offer demonstrations of hardware and software applications in criminal justice and will include kiosks of delegations; non-governmental organizations, research institutes etc.; and leading information technology companies.

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AND THE TREATMENT OF OFFENDERS

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CRIMINAL JUSTICE AND POLICE SYSTEMS: MANAGEMENT AND IMPROVEMENT OF POLICE AND OTHER LAW ENFORCEMENT AGENCIES, PROSECUTION, COURTS AND CORRECTIONS; AND THE ROLE OF LAWYERS

Addendum

United Nations Crime and Justice Information Network: present and future dimensions; towards the establishment of a United Nations crime and justice clearing-house

Progress report prepared by the Secretariat

Summary

The present report has been prepared pursuant to Economic and Social Council resolution 1994/19, section IV, in which the Council recommended that the workshop entitled "International cooperation and assistance in the management of the criminal justice system: computerization of criminal justice operations and the development, analysis and policy use of criminal justice information" should consider such issues as cost-effective ways of promoting the availability of data. The report presents a review of progress made in the development of the computerized United Nations Crime and Justice Information Network, its scope and planned activities, with particular reference to the needs and difficulties, both logistical and technical, relating to the electronic distribution of crime-related information to and from developing countries.

*A/CONF.169/1.

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INTRODUCTION

A. Legislative background

1. The Economic and Social Council, in its resolution 1993/32, on preparations for the Ninth United Nations Congress on the Prevention of Crime and the Treatment of Offenders, endorsed the programme of work for the Ninth Congress, including the holding of, *inter alia*: a workshop entitled "International cooperation and assistance in the management of the criminal justice system: computerization of criminal justice operations and the development, analysis and policy use of criminal justice information".

2. In its resolution 1994/19, section IV, the Council recommended that the workshop should evaluate progress in computerization and the policy and management use of information achieved since the Eighth United Nations Congress on the Prevention of Crime and the Treatment of Offenders, held at Havana from 27 August to 7 September 1990. The Council also recommended that the workshop should consider such issues as cost-effective ways of promoting the availability of data.

3. The Council, in its resolution 1986/11, invited the Secretary-General to make all efforts to, *inter alia*, establish in cooperation with the United Nations institutes and other entities concerned, a global crime prevention and criminal justice information network, with the Crime Prevention and Criminal Justice Branch of the Secretariat as a focal point, including a mechanism for the centralization of inputs from non-governmental organizations and scientific institutions. Pursuant to that resolution, a series of informal preparatory meetings were held at United Nations Headquarters and at Vienna. The meetings considered ways and means of providing the United Nations crime prevention and criminal justice programme with a cost-effective and modern information mechanism.

4. In collaboration with the School of Criminal Justice at the State University of New York at Albany, the United Nations Crime and Justice Information Network (UNCJIN)* was established in September 1988. The founding members of UNCJIN were the Crime Prevention and Criminal Justice Branch and the following institutes cooperating with the United Nations in the field of crime prevention and criminal justice: the United Nations Interregional Crime and Justice Research Institute (UNICRI);** the Asia and Far East Institute for the Prevention of Crime and the Treatment of Offenders; the Latin American Institute for the Prevention of Crime and the Treatment of Offenders; the European Institute for Crime Prevention and Control, affiliated with the United Nations;*** the Arab Security Studies and Training Centre; the Australian Institute of Criminology and the Centro Nazionale di Prevenzione e Difesa Sociale.

5. The Economic and Social Council, in its resolution 1989/68, requested the Secretary-General to secure adequate resources for the full realization of a global crime prevention and criminal justice information network, including recruiting a specialist to implement it, ensuring access to all potential users and taking advantage of existing information networks.

6. In 1991, extrabudgetary funding was secured for the network from the Bureau of Justice Statistics of the United States Department of Justice, and that support has continued up until the end of 1994.****

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*Formerly called the United Nations Criminal Justice Information Network.

**Formerly called the United Nations Social Defence Research Institute.

***Formerly called the Helsinki Institute for Crime Prevention and Control, affiliated with the United Nations (HEUNI).

****Until the end of 1992, the network was operated through a host information service known as the Telecommunications Cooperative Network, which was the cheapest and most reliable host network available at the time. The Telecommunications Cooperative Network had been especially set up to cope with international aspects of computer networks. It also provided gateways to other networks. The cost was high, so membership was limited to the regional institutes and a small number of universities.

(continued...)

7. A report of the Secretariat on computerization of the administration of criminal justice (A/CONF.144/14 and Add.1) was considered by the Eighth Congress, under agenda item 4, on criminal justice policies in relation to problems of imprisonment, other penal sanctions and alternative measures (topic II).

8. On the recommendation of the Eighth Congress, the General Assembly adopted resolution 45/109, in which it emphasized the common problems faced by all Member States in the administration and computerization of criminal justice. In the same resolution, the General Assembly requested the Secretary-General, in cooperation with the network of United Nations institutes for the prevention of crime and the treatment of offenders, to strengthen the global crime and criminal justice information network by, *inter alia*: (a) enhancing communication between Member States by utilizing an electronic network; and (b) developing and distributing appropriate publications, reports and newsletters.

9. The European Regional Preparatory Meeting for the Ninth United Nations Congress on the Prevention of Crime and the Treatment of Offenders, held at Vienna from 28 February to 4 March 1994, considered the use of state-of-the-art information technology to be a necessary ingredient in promoting international police cooperation (A/CONF.169/RPM.3 and Corr.1, para. 80). It recommended that the workshop on international cooperation and assistance in the management of the criminal justice system, to be held within the framework of the Ninth Congress, should provide a mechanism for identifying needs for the creation of statistical infrastructures where those were essential to improving national statistical reporting systems (A/CONF.169/RPM.3 and Corr.1, resolution, sect. I). It proposed that the Ninth Congress formulate practical suggestions on how to mobilize and integrate the services of existing information centres in various countries, thereby providing States with accurate information on effective management practice in regard to the administration of justice, including police services (A/CONF.169/RPM.3 and Corr.1, para. 86).

10. The Western Asia Regional Preparatory Meeting for the Ninth United Nations Congress on the Prevention of Crime and the Treatment of Offenders, held at Amman from 20 to 24 March 1994, invited the Ninth Congress to consider ways of further developing forms of technical cooperation, such as the provision of training and research programmes and the development of working manuals (A/CONF.169/RPM.5, resolution, sect. I). It expressed its appreciation to the Arab Security Studies and Training Centre for its role in facilitating the exercise of the United Nations global coordinating function, *inter alia*, by hosting joint programme coordination meetings of the United Nations crime prevention and criminal justice programme network (A/CONF.169/RPM.5, resolution, sect. I.A). It called on Member States to promote further cooperation between their national crime prevention and criminal justice sectors in order to improve information exchange, in particular at the regional level (A/CONF.169/RPM.5, resolution, sect. I.B).

11. In its resolution 1993/34, section IV, the Economic and Social Council requested the Secretary-General to strengthen and expand the clearing-house functions of the Crime Prevention and Criminal Justice Branch and to organize training courses that would enable criminal justice professionals, in particular those in developing countries, to acquaint themselves with the services of the United Nations Criminal Justice Information Network.

12. In its resolution 3/3, the Commission on Crime Prevention and Criminal Justice, recalling Economic and Social Council resolutions 1992/22 and 1993/34, section IV, recommended changing the name of the United Nations Criminal Justice Information Network to the United Nations Crime and Justice Information Network.

****(...continued)
UNCJIN had some 50 members in 1990, when it was moved to Internet. Today, membership is free (only access to Internet is required), there are 10 times as many members and there are far more extensive databases available, since storage costs are minimal.

13. In its resolution 1993/56, the Economic and Social Council reiterated the high priority that it attached to easy, economical, uncomplicated and unhindered access for States Members to the growing number of computerized databases and information systems and services of the United Nations. The Secretary-General reported to the Council at its substantive session of 1994 on the follow-up action taken on that resolution, including United Nations Internet activities (E/1994/98).

14. The Economic and Social Council, on the recommendation of the Commission at its third session, adopted resolution 1994/19. In section II of that resolution, the Council invited the Ninth Congress to consider practical methods for promoting, where necessary, the exchange of experiences and information on international cooperation, including the establishment and development of depositories of information on national legislation, statistics and other data.

15. The present report provides information on the progress made in developing UNCJIN as a tool for promoting through electronic networking greater availability of crime-related data and other information. The Economic and Social Council, in its resolution 1994/18, invited Member States to ensure the widest possible dissemination of United Nations standards and norms in crime prevention and criminal justice. In its resolution 1994/22, the Council stressed that providing technical assistance through, *inter alia*, the dissemination and exchange of information is one of the most effective means of intensifying international cooperation. At the third session of the Commission, it was noted that broad dissemination of those standards and norms would contribute to the observance, in the period 1990-1999, of the United Nations Decade of International Law.[1] The Commission noted that there was a need for intensified exchanges of information between States concerning legislation and procedures.[2] It also noted that the involvement of research-oriented institutions* was important to the development of a proper scientific base.[3] It was noted that knowledge transfer and other forms of mutual assistance were of benefit at the global level; the Crime Prevention and Criminal Justice Branch could play a more central role in promoting those forms of mutual assistance if its programme capacity was strengthened.[3]

B. Substantive background

16. Regional preparatory meetings for the Ninth Congress have dealt with the question of developing a worldwide infrastructure for the efficient and effective exchange of criminal justice information. The African Regional Preparatory Meeting for the Ninth United Nations Congress on the Prevention of Crime and the Treatment of Offenders, held at Kampala from 14 to 18 February 1994, reiterated the need to create a more reliable database on criminal justice in the region. It expressed the hope that, with an increasing level of computerization and assistance in the development of national capacities for the collection of statistical information, the number of African countries contributing to the United Nations crime surveys would further increase (A/CONF.169/RPM.2, para. 74).

17. The Asia and Pacific Regional Preparatory Meeting for the Ninth United Nations Congress on the Prevention of Crime and the Treatment of Offenders, held at Bangkok from 17 to 21 January 1994, noted in its resolution that one of the purposes of the United Nations, as stated in the Preamble to its Charter, was to achieve international cooperation in solving international problems (A/CONF.169/RPM.1/Rev.1 and Corr.1, resolution). It emphasized that the majority of criminal justice systems lagged behind the development of new approaches and technology, including those in information technology, which were widely used in other fields with great increases in efficiency. Adequate investment in new methods and technology could be repaid by gains in effectiveness and efficiency. It suggested that criminal justice and police systems should be strengthened by, among other things, strengthening the exchange of views, expertise between and among

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*Many of which are represented on UNCJIN.

countries internationally, regionally and bilaterally, and by enhancing the coordinating role of the relevant United Nations bodies (A/CONF.169/RPM.1/Rev.1 and Corr.1, paras. 46 and 48).

18. The twentieth century has seen rapid changes in information technology, and the pace of change has been most dramatic in the last decade. The advent of the personal computer and its rapid transformation into a compact single unit with power equal to a mainframe computer system of just 10 years ago have made it possible to store and manage massive amounts of information as was never possible before. In addition, the revolution in communications technology - fibre optics, satellite transmission - has made it possible to transport large amounts of information anywhere in the world in a fraction of a second.*

19. It is important to recognize the global proportions of the revolution in information and communications technology. This is not to say that revolutionary changes have begun or have occurred in the same way in every country or region of the world; however, the changes that have occurred have left no region untouched. Satellite television can reach any part of the globe. The global computer network can reach any country that has a telephone system and, with satellite technology, can reach countries via satellite that do not even have a telephone system. Experts on the information revolution have noted that the information society transcends all political, social and economic boundaries.[4]

20. This means that less developed countries may be on the receiving end of this information explosion. That is, they may be in a position to receive satellite transmissions, for example, but they are not in a position to make an input into the information flow. The information flows one way and is not interactive. That is especially the case with regard to mass communications such as television and radio and the popular print media. Improvement in the literacy rates of States was, until the advent of television, a two-edged sword. With the introduction of print literacy came the possibility to be subjected to the one-way flow of print media. Television has, to some degree, changed that: a person does not need to be able to read in order to obtain information from television.

21. That observation has led many persons concerned with public education, public literacy and access to information to advocate the development of a new concept called information literacy: developing in individuals the skills not only to read, but also to be able to critically evaluate the worth and validity of information, and developing the skills to seek out information that is needed. This approach involves an active learner model as opposed to the more traditional, passive learner model, in which the individual is the passive recipient of information that is fed to him or her by individuals or organizations that have control of the various print and visual media.[5]

22. It is the traditional, one-way flow of information that is currently under scrutiny. Computer network systems are interactive, and they provide open access to all who are connected. On a network such as Internet, it is possible to contribute information and receive it without the participants in the information flow having any knowledge of the authority, qualifications or station in life of the participants.** Thus, information exchange by this model furthers the development towards the democratization of knowledge. Because of the increased complexity of the flow of information, however, and the difficulty in analysing

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*For a critical review of the process of the democratization of knowledge, see Neil Postman, *Technopoly* (New York, Vintage, 1993).

**On-line communication, perhaps the ultimate in democratic exchange of information, eliminates barriers. People can be whoever they want to be. Shy people become bold. Accounting clerks communicate on the same level as chief executive officers (T. LaQuey and J. Ryer, *The Internet Companion* (Reading, Massachusetts, Addison-Wesley, 1993)).

information obtained in this manner, simple literacy is no longer sufficient. The concept of literacy, therefore, has now become that of information literacy.*

23. Not only has there been a revolution in information technology and communications, but there has also been an information explosion in criminal justice. Criminal justice educational programmes continue to expand throughout the world, and the amount of research published is at an all-time high. National government institutions and research organizations have also begun to produce and disseminate large amounts of information on their criminal justice systems and on crime prevention and the treatment of offenders. Those developments are significant in that many of the attempts to disseminate the information are being made through a variety of frequently published newsletters. Newsletters have made a comeback since the revolution in desktop publishing. They also lend themselves well to dissemination electronically via Internet, as discussed below.

24. All of the changes recounted above have culminated in the "information superhighway", with Internet at its core. Internet is a conglomeration of computer networks that are connected through various protocols and rules of operation. The special feature of Internet is its worldwide connection; electronic mail serviced by Internet is currently accessible in more than 150 countries, many of which are developing countries.** Internet is not actually run by any particular organization or body. The network is a loose connection of many smaller networks that have different purposes and goals.

25. The growth of Internet in the last two years has been extremely fast. As of 4 August 1994, there were 3.2 million reachable computer machines, representing an increase of 81 per cent during a one-year period and an even greater increase during a six-month period. One million new hosts were added in the first six months of 1994. According to some reports, Internet has about 30 million users, and that number is expected to double within a year.[6] Perhaps the main reason for the rapid increase in Internet users is the fact that the cost of being connected to Internet has dropped dramatically in the past three years. Many individuals working for universities and research organizations or state offices enjoy access to it at little or no cost. And the commercial costs of such access have also become much more affordable, although some communications costs in Europe and elsewhere outside the United States remain relatively high.

26. The various facilities of Internet demonstrate that the capacity to exchange and disseminate information has become far greater than ever before. The transformation is even greater than that made possible by the Gutenberg printing press. Such an open, low cost, interactive, two-way process of information exchange has never before been possible. That is what sets Internet apart from all other developments that have contributed to the emergence of the global information society.

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*Some organizations have argued that it is a basic right of all individuals to have access to and the ability to use information to enhance their quality of life, to succeed in their work and to fulfil their civic responsibilities (P. S. Breivik, "Education for the information age", D. W. Farmer and T. F. Mech, eds., *New Directions for Higher Education*, No. 78, summer 1992).

**As of 4 August 1994, the full services of Internet were available in the following countries or areas: Algeria, Antarctic, Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, China, Colombia, Costa Rica, Croatia, Cyprus, Czech Republic, Denmark, Ecuador, Egypt, Estonia, Fiji, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, India, Indonesia, Iran (Islamic Republic of), Ireland, Italy, Japan, Kuwait, Latvia, Liechtenstein, Lithuania, Luxembourg, Macau, Malaysia, Mexico, Netherlands, New Zealand, Nicaragua, Norway, Panama, Peru, Philippines, Poland, Portugal, Republic of Korea, Republic of Moldova, Romania, Russian Federation, Saudi Arabia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Thailand, Tunisia, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, Uruguay and Venezuela.

I. SERVICES PROVIDED BY THE UNITED NATIONS CRIME AND JUSTICE INFORMATION NETWORK

27. The services provided by UNCJIN on Internet may be divided into three categories: (a) structured access to criminal justice and related information; (b) the storage, accumulation and dissemination of databases; and (c) the open exchange of information via electronic bulletin-boards and electronic "meetings".

28. Structured access to criminal justice and related information is obtained via the UNCJIN Gopher system. Gopher is the name given to a particular type of software on Internet that helps the user to find the particular data or other information that might be needed. By choosing items from a series of menus on Gopher, it is possible for the user to steer through the mass of information and to retrieve the information that is needed. Not only is Gopher easy to use because of the menu system, but it also allows the user to search the menus of all Gopher systems on any computer that has such a program, anywhere in the world, so long as that computer is connected to Internet. That makes Gopher tremendously powerful, because it means that every Gopher menu is connected to every other Gopher menu. It allows gateways or access to other Gopher systems all over the world. Thus, for example, on the UNCJIN Gopher system, it is possible to gain access to, for example, the United Nations Development Programme (UNDP) Gopher system or the World Health Organization (WHO) Gopher system and to search or navigate through their menus at will. The power of such access lies in the fact that it is no longer important where the information is physically located - whether it is on a computer in Cairo, New York, Tokyo or Vienna. This revolution in networking - the "information superhighway" - eliminates the need for a large mainframe computer. Internet has effectively turned the huge number of smaller desktop computers into one massive world computer.

29. UNCJIN is committed, according to the various legislative mandates described in section A above, to developing, storing and disseminating databases related to the United Nations crime prevention and criminal justice programme and, in particular, to the activities of the Crime Prevention and Criminal Justice Branch and of the institutes and entities, both intergovernmental and non-governmental, cooperating within the framework of the programme. Accordingly, on the UNCJIN Gopher system, there is a wide range of information, including selections of statistics from the United Nations surveys of crime trends and operations of criminal justice systems. Criminal justice country profiles produced by interregional and regional institutes, all United Nations standards, norms, rules and guidelines in crime prevention and criminal justice, crime statistics and reports from various Governments (for example, press releases and reports of the Bureau of Justice Statistics of the United States Department of Justice), newsletters of various criminal justice institutes and other non-governmental organizations concerned with criminal justice at the international level, and the world directory of criminological institutes. A menu on the UNCJIN Gopher system might appear as follows:

1. About UNCJIN
2. United Nations rules
3. Available information from UNCJIN
4. United Nations criminal justice country profiles
5. United Nations Development Programme
6. Bureau of Justice Statistics documents
7. United States Supreme Court decisions, recent
8. World Criminal Justice Library Network
9. CIA World Factbook 1992
10. Center for the Study of Constitutionalism in Eastern Europe
11. World Health Organization Gopher
12. F.B.I. Gopher
13. Foreign and international law: primary documents and commentary

30. Selecting the first item on the above menu might produce the following:

1. Index of available rules from the United Nations
2. Standard Minimum Rules for the Treatment of Prisoners
3. Declaration on the Protection of All Persons from Being Subjected to Torture and Other Cruel, Inhuman or Degrading Treatment
4. Code of Conduct for Law Enforcement Officials
5. Safeguards guaranteeing protection of the rights of those facing the death penalty
6. Milan Plan of Action
7. Guiding Principles for Crime Prevention and Criminal Justice in the Context of Development and a New International Economic Order
8. Basic Principles on the Independence of the Judiciary
9. Model Agreement on the Transfer of Foreign Prisoners and recommendations on the treatment of foreign prisoners
10. United Nations Standard Minimum Rules for the Administration of Juvenile Justice
11. Declaration of Basic Principles of Justice for Victims of Crime and Abuse of Power
12. United Nations Standard Minimum Rules for Non-custodial Measures (The Tokyo Rules)
13. United Nations Guidelines for the Prevention of Juvenile Delinquency (The Riyadh Guidelines)
14. United Nations Rules for the Protection of Juveniles Deprived of their Liberty
15. Basic Principles on the Use of Force and Firearms by Law Enforcement Officials
16. Basic Principles on the Role of Lawyers
17. Guidelines on the Role of Prosecutors
18. Model Treaty on Extradition

31. Access is provided to all the major criminal justice libraries in the world (including their updated accession lists) via the World Criminal Justice Library Network. Furthermore, access is provided to various electronic journals in criminal justice, to the constitutional documents of a growing number of countries throughout the world, to United Nations organizations (UNDP, the United Nations Educational, Scientific and Cultural Organization (UNESCO) and WHO), and to various government agencies in the United States, such as the Department of State and the Department of Justice. This, however, is just a small sample of what is available. It is impossible to cover all sources of information that are accessible, since there are so many of them and they change daily.

32. The most recent addition to UNCJIN is a file transfer protocol service,* which allows for the retrieval of computer files from a particular site. The files may be in any form and may be retrieved by any user who (a) is connected to Internet and (b) has file transfer protocol software. UNCJIN has made available the data sets of the first, second and third United Nations surveys of crime trends and operations of criminal justice systems in various software and statistical formats. The service is slightly more difficult to use than others since it requires some knowledge of programming commands, but it is especially suited to researchers who wish to obtain data sets for conducting research and analysis.

33. The exchange of information is the most important goal of UNCJIN. The UNCJIN Gopher system makes access to information and databases relatively easy for users all over the world. It is also a relatively straightforward matter for UNCJIN to set aside sections of the Gopher menus for databases and other sources of information. When national organizations make available data and other statistical information about their

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*A set of software rules that are used to allow one computer to "speak" to another so that its files may be retrieved (see also Raul Zambrano, "Sustainable development network: extending the links and their value", *Logon*, No. 25, June 1994, p. 7; and Mutawakilu A. Tiamiyu, "Sub-Saharan Africa and the paperless society: a comment and a counterpoint", *Journal of the American Society for Information Science*, vol. 40, No. 5 (1989), pp. 325-328).

countries, they are essentially paving the way for the exchange of information. The most effective and immediate way of exchanging information, however, is through UNCJIN-L, an electronic discussion list and bulletin-board.

34. UNCJIN-L is essentially a large list of users who are connected electronically to each other, so that each time they post a message it is immediately sent to everyone on the list. UNCJIN-L now has almost 500 members, and its membership is growing rapidly. The information exchanged by users on the list ranges from announcements of conferences and meetings worldwide to job announcements, descriptions of new criminal justice educational programmes, requests for assistance in finding particular types of information for research and legislative use, and a discussion of significant issues of the day, such as child abuse, the measurement of crime, the age of criminal responsibility, the relationship between peace-keeping and policing, freedom of speech, the purposes of punishment, conditions of prisons, and the status of rehabilitation. As the number of users on the list increases, its potential benefit will increase. Some striking examples of its usefulness are outlined in section II below.

35. The UNCJIN-L bulletin-board and UNCJIN file transfer protocol are particularly important for developing countries. The services may be accessed by electronic mail by users who do not have full access to Internet. Many of the connections made to Internet permit only electronic mail exchange; such connections are commonly the only ones available in developing countries. Methods of connecting developing countries to Internet are described in the annex to the present report. While the procedures are perhaps more cumbersome than accessing UNCJIN Gopher or file transfer protocol directly, they are nonetheless effective and, once learned, easily put into daily practice.*

II. THE IMPORTANT ROLE PLAYED BY THE UNITED NATIONS CRIME AND JUSTICE INFORMATION NETWORK IN THE GLOBAL INFORMATION SOCIETY

A. Accessibility of the United Nations Crime and Justice Information Network

36. Information is the key to accountability, and accountability is a key concept involved in "good governance".** The more information that Governments provide concerning the operations of criminal justice systems and the patterns of crime in their countries, the more there is a possibility for accountability. It can be particularly interesting for Governments to observe, for example, how other Governments administer and expend resources on criminal justice, the differential rates of reported crime in other countries, the different numbers of offenders, the extent of use of prison as a criminal sanction, the types of crime prevention programmes, and the size and quality of police forces and court systems. The exchange of information concerning these and other related issues helps create a climate of governmental responsibility for crime prevention and criminal justice and sets the pace for the development of rational policy formulation.

37. Until UNCJIN began operating on Internet, however, the dissemination of criminal justice information was limited to the circulation of official documentation and newsletters. It is expensive to market and circulate hard-copy United Nations publications. Furthermore, the availability of the data sets of the United Nations surveys of crime trends and operations of criminal justice systems was widely considered to be inadequate. Making available on Internet United Nations information on crime prevention and criminal

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*For detailed instructions on how to access bulletin-boards and databases via file transfer protocol on Internet by electronic mail, see Clay Shirky, *The Internet by e-mail* (Emmeryville, California, Ziff-Davis, 1994).

**See the report of the Secretary-General on progress made on the fourth and fifth surveys of crime trends and operations of criminal justice systems, and other initiatives under way to acquire, process and distribute crime prevention and criminal justice data (E/CN.15/1994/2, para. 3).

justice has drastically changed all that. Information on UNCJIN Gopher or file transfer protocol can, theoretically, directly be accessed by some 30 million Internet users. While so many users will not be accessing UNCJIN databases, the fact remains that more people are likely to make use of the information.

B. Information on developing countries

38. The UNCJIN Gopher program makes it possible to access information on developing countries at the touch of a computer key. For example, a person running the program might have access to the following menu under "Peace, human rights and social justice in developing countries":

1. What is PeaceNet?
2. Organizations on PeaceNet (a sample)
3. Africa networking on PeaceNet
4. Balkans/Ex-Yugoslavia
5. Central America and Mexico information
6. Cuba information
7. Defence conversion and military toxics
8. East Timor networking on PeaceNet
9. Human rights information
10. Immigrant and refugee rights
11. Latin America information
12. Middle East information

39. Choosing the third item on the above menu might produce the following:

1. Connect with Africa on PeaceNet
2. Information resources on PeaceNet about Africa
3. Africa organizations online
4. Affiliated networks in Africa
5. Africa conferences on the APC and Partner networks
6. CABECA: Electronic Communication Network Initiative for Africa
7. South Africa Watch Magazine (from Oxfam Canada)
8. Hunger Project - Africa Prize for Leadership
9. Other Africa information on Internet

40. The UNCJIN-L bulletin-board makes it possible to exchange information immediately without regard for national boundaries, statuses or vocations. Typical topics of the day on UNCJIN-L might be as follows:

1. Minimum age for prosecution (4 messages)
2. New drug text - the Netherlands
3. Death row inmates and history of child abuse
4. For students at Lamar University
5. Faculty positions
6. Battered parents
7. UNCJIN rules reminder
8. Causes of delinquency
9. Parent abuse
10. Call for papers

C. Practical benefits of the electronic exchange of information

41. There are a number of examples of the practical uses of information exchange on UNCJIN-L. In September 1994, an urgent request was posted on the UNCJIN-L bulletin-board for any information concerning the minimum legal age of criminal responsibility in various countries. The individual who requested the information was an attorney involved in a case before the European Commission on Human Rights. The case involved two children who had been tried as adults for killing a toddler. They each had been sentenced to life in prison for having committed the crime. Since the country in question was a signatory to the Convention for the Protection of Human Rights and Fundamental Freedoms,[7] the case had been brought before the Commission. Information on the age of responsibility for children in other countries was therefore highly pertinent to the case but not readily available. The request posted on UNCJIN-L brought forward several responses, some of which were based on data obtained from the extensive criminal justice profiles assembled for the United Nations surveys of crime trends and operations of criminal justice systems, some were from criminal justice experts and others were from a non-criminal justice audience. The attorney who had requested the information later noted that, at the time, there was simply nowhere else to turn to for the information he needed.

42. In another instance, a note from the Institute of Criminology at the University of Cape Town was posted on UNCJIN-L informing of the drafting of a new juvenile justice bill for South Africa and expressing gratitude for the provision of information on minimum legal age of responsibility, which had been the basis of much of the discussion on the subject.

43. UNCJIN on Internet serves as an intermediary hosting electronic mail conferences. For instance, in January 1995, in the United States, the Department of Criminal Justice of the University of Arkansas at Little Rock sponsored an international conference on crime and justice. The difference between that conference and others of its kind was that none of the participants needed to leave their workstations as the conference was conducted on Internet. Because of the budgetary constraints of academic institutions, many people attend fewer, if any, professional conferences or none at all; others stay for shorter periods of time. Conducting the above-mentioned conference on Internet alleviated some of those budgetary problems because the participants did not have to travel to reach the conference site. All that was required of them was to register for the conference and to subscribe to various panels. Participants could even "present" their papers while remaining in their homes or offices. Another way in which UNCJIN has influenced criminal justice constituency can be seen in its impact on forming new discussion groups, such as the newly established electronic discussion forum on computer-related crime (COMCRI-L).*

44. At the Ninth Congress, Internet electronic mail will be one of the channels used to transmit documents to the United Nations Office at Vienna for processing. That will result in considerable savings in the budget for the Ninth Congress.

45. It can be seen from the above examples that the exchange of information has a multiplier effect when it occurs via an electronic bulletin-board. It is also apparent that such an exchange of information can have a significant practical impact on the enforcement of human rights in criminal justice and the legislation process. The multiplier effect occurs beyond the UNCJIN-L list, when significant actors in the criminal justice system, such as lawyers, judges, police, politicians, legislators, planners and policy makers, are all affected by information originating from one small request posted on UNCJIN-L. Perhaps the most impressive fact of all is that the information is immediately available worldwide.

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*COMCRI-L may be accessed using the following electronic address: listserv@vm.cc.uni.torun.pl. subscribe COMCRI-L <first name> <last name>.

46. Considerable additional benefits have accrued from this medium of information exchange. Early in 1994, there was a spirited debate on UNCJIN-L on the topic of race and criminal justice. The discussion, which was often animated and emotional, involved individuals of various racial, religious, ethnic and social backgrounds. The discussion was not only provocative but informative. What is more important, it was a discussion that could not have occurred in a setting such as a classroom, where social and ethnic backgrounds may play an important part in who speaks and who does not and what is actually said. In an electronic discussion, however, people do not have to physically confront each other, nor do they have to reveal their actual identities. Thus, information may be exchanged "anonymously". Issues are therefore discussed in a much more open and frank manner. The established way of disseminating information, from the top down, as described in section I. B above, is potentially broken. The "weaker" participants in the information exchange (i.e. members of the less powerful groups in society) do not have to sit back and receive the information as it is given to them. They may react and contribute fully and equally to the UNCJIN-L discussion.

47. That is why UNCJIN-L is of great importance to less developed countries, which, in the past, have been the recipients of information from the top down. As more and more developing countries gain access to Internet, it will be more and more possible for a two-way flow of information to occur. It is likely that the development of electronic telecommunications and information systems will leap ahead of the development of other more traditional infrastructure of developing countries, if it has not already done so. Thus, it is most important for UNCJIN to be ready to meet the expected upward surge in the number of developing countries connected to Internet. That number has increased substantially in the last two years.

III. PROBLEMS AND CHALLENGES

A. Globalization of criminal justice and diversity of criminal justice policies

48. In the past five years, advances in understanding of the global implications of policy issues in such fields as the environment, industrial development, production, ecology and economics have been accompanied by a rapid globalization of criminal justice. Not only has the communications revolution brought with it the instant relaying of crimes and issues related to criminal justice via satellite television news to almost any corner of the world, but certain crimes have had immense global ramifications. Examples of such crimes include bank fraud, environmental pollution, illicit drug trafficking, problems related to migration and crime, and human rights abuses, including the infringement of privacy.* Furthermore, it has become clear that the ways in which these and other crimes are processed in criminal justice systems vary immensely. The challenge facing UNCJIN as the clearing-house and centre for information exchange in international criminal justice is to assist Member States in becoming aware of the variety of criminal justice systems in the world, and of the diversity of solutions found in different countries.

B. Electronically distributed criminal justice information and its reliability

49. For the past 20 years, the Crime Prevention and Criminal Justice Branch has steadily developed and refined the collection of crime and criminal justice information and statistics within the framework of the

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*See, for example, the working paper prepared by the Secretariat entitled "Criminal justice and police systems: management and improvement of police and other law enforcement agencies, prosecution, courts and corrections; and the role of lawyers" (A/CONF.169/6, paras. 89-92); the background paper for the workshop on international cooperation and assistance in the management of the criminal justice system: computerization of criminal justice operations and the development, analysis and policy use of criminal justice information (A/CONF.169/13, paras. 37-40; and James Michael, *Privacy and Human Rights: an International and Comparative Study with Special Reference to Developments in Information Technology* (Paris, United Nations Educational, Scientific and Cultural Organization, 1994).

United Nations surveys of crime trends and operations of criminal justice systems. The surveys have increasingly revealed the considerable variety in levels of crime, processing of offenders, use of incarceration, and expenditure on the criminal justice system. Although some 20 reports utilizing the data on crime trends have been made public (A/CONF.169/CRP.2)* and a special form has been created to facilitate the publishing of comparative crime trends (*Trends: UNCJIN Crime and Justice Letter*), the biggest challenge before the Crime Prevention and Criminal Justice Branch, with its limited resources, is to disseminate the information to Member States. Much information has been collected, but not enough has been distributed.

50. The Crime Prevention and Criminal Justice Branch will be able to meet this challenge through UNCJIN in several ways. First, the data sets of the first three United Nations surveys of crime trends and operations of criminal justice systems are available at no cost on Internet via a special file transfer protocol.** Any person connected to Internet can access the data sets and use them for research or planning.*** Internet has already proved to be an excellent means of distributing United Nations data sets. In September 1994, there was an average access rate of 10 persons per day. One advantage of distributing such data sets electronically is that they may be improved and updated easily, which would not be the case if the data were published in hard copy.

51. The electronic dissemination of data brings not only increased efficiency but also new challenges. The validity and reliability of electronically obtained data, especially international crime and criminal justice statistics, are a real source of concern, largely because of the changeability of the data and because often the authoritative source of the information is difficult to determine. Although there are a number of cautionary "readme" files placed with the data sets that are available from the United Nations, there is often the problem of statistical data being misinterpreted. In an effort to solve the problem, the Crime Prevention and Criminal Justice Branch, together with regional institutes, especially the European Institute for Crime Prevention and Control, affiliated with the United Nations, has begun developing criminal justice profiles for countries contributing information to the United Nations surveys on crime trends and operations of criminal justice systems. The profiles are updated and validated after the data for each United Nations survey have been gathered. They include descriptions of the criminal justice systems of each country and an attempt to provide a meaningful context within which the statistical data of the countries may be assessed. The profiles can be accessed easily via the UNCJIN Gopher menu system.

52. It can be seen that disseminating information electronically is far more efficient and effective than other ways of disseminating information. Furthermore, the individuals connected to Internet are seeking information; thus, the "audience" on Internet is far more likely to have a use for such information. In addition, depending on the computer program, it may be possible to count the number of times the information is accessed and, presumably utilized. That cannot be done with hard copy. Finally, the dissemination of information on hard copy is a complex and expensive process, involving paper, ink, envelopes, a relatively slow mailing system, sometimes a year or more of lead time for updating, and large mailing lists or other marketing outlets.

C. Electronic libraries

53. The greatest problem with information in hard copy is that it is expensive to store and to purchase. With the enormous information explosion in criminal justice in the past 10 years, it has become impossible

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*Available from the Crime Prevention and Criminal Justice Branch.

**The current address for accessing this site is 128.204.33.18; login: anonymous; password: userid. More details on this service and on access, will be made available at the Ninth Congress. The results of the Fourth Survey of Crime Trends and Operations of Criminal Justice Systems will soon be made available as well.

***See the International Centre for Criminal Law Reform and Criminal Justice Policy, Guide to Internet Resources in Criminal Law and Criminal Justice, electronically available on Gopher (view.ubc.ca port 70) and World Wide Web (http://view.ubc.ca).

for libraries and documentation centres to collect everything. Thus, one important change in the development of libraries in the late twentieth century has been that they have given up developing their own collections as a primary concern and instead have begun to concentrate on accessing information. Libraries have begun to form consortia in order to develop joint electronic collections and to improve access to each other's collections. Internet and UNCJIN are working with such library organizations as the World Criminal Justice Library Network to provide access to those collections, including lists of conference documents and papers, which are difficult for libraries to collect or, once collected, to catalogue. Via UNCJIN Gopher, access to the world's leading criminal justice libraries is immediately available on Internet.

D. Participation of developing countries

54. One concern often raised in regard to the global electronic information society is that it will leave developing countries, or least developed countries, far behind in the information age. UNCJIN has recognized this problem and has published from time to time a newsletter in hard copy for those countries where telecommunications and computing are not well developed; however, this can only be a temporary solution to the massive problem of getting developing countries connected to the global information society. Providing developing countries with hard copy of the massive amount of information now exchanged electronically is simply not feasible. It is expensive to purchase, ship and store such information in hard copy. It would be far cheaper and more efficient to bring developing countries into the information age, to provide developing countries with access, via Internet, to modern criminal justice libraries and the databases made available by UNCJIN. The General Assembly, in its resolution 45/109, requested the Secretary-General and Member States to pay special attention to the developing countries in providing technical assistance and cooperation for the formulation of information programmes and statistics regarding crime and criminal justice. The challenge is for the Crime Prevention and Criminal Justice Branch, as well as all other United Nations entities concerned with the development of the infrastructure of less developed countries, to provide thos countries with the possibility of having electronic communications and of being connected to Internet. Substituting hard-copy publications is hardly a solution. Accessibility is crucial to less developed and developed countries alike. The key to meeting the challenge lies not only in assisting in the development of a basic infrastructure for telecommunications and computer hardware and software, but also in providing training for relevant personnel to become information-literate.* Developing countries must be empowered with the knowledge of how to access information and where to find it. This presents a challenge to all persons involved in criminal justice, regardless of the level of development of their countries.

55. While it is difficult to get developing countries connected to UNCJIN via Internet, it is certainly not impossible. There are already at least 30 developing countries with a full Internet link and many more with partial links. A UNDP initiative involving the Sustainable Development Network has attempted, through workshops, meetings and studies conducted throughout Africa, Asia and Latin America to assist developing countries in becoming connected to Internet.[8] Even the Sustainable Development Network project, which tackles the often challenging technological problems that arise in establishing Internet connections in developing countries, cannot manage without financial collaboration involving national and international organizations. There are also some intermediate solutions that may assist developing countries in establishing Internet connections (see annex).

56. One challenge that faces the United Nations crime prevention and criminal justice programme, is keeping up with the rapid developments in software and hardware. Internet is far different today than it was just one

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*It is not being argued here that expansion of information technology into developing countries will necessarily lead to improved economic growth. This has been shown to be, at best, a false hope (for an excellent analysis of the question, see Herbert S. Dordick and Georgette Wang, *The Information Society: A Retrospective View* (Newbury Park, Sage, 1993)). Aiding developing countries in becoming information-literate will ensure that they will not become passive victims of the propaganda of the information age. Developing countries must be empowered to evaluate information coming to them from the global information society.

year ago. While UNCJIN will become easier to use for those who wish to gain access to data, it is going to become more and more expensive for data and access providers, such as the Crime Prevention and Criminal Justice Branch, because they must keep up with the latest developments in hardware and software that make it easier for users to access information. Thus, the upgrading of hardware and software must be a continuous process. And it will be essential to make sure that the system operators and other relevant personnel are also kept up to date on new developments.

IV. FUTURE DEVELOPMENT OF THE UNITED NATIONS CRIME AND JUSTICE INFORMATION NETWORK

A. Transfer of the United Nations Crime and Justice Information Network to the United Nations Office at Vienna*

57. Future development of UNCJIN will depend on many factors. From an organizational point of view, important decisions will have to be made to encourage its development in a more decentralized manner. An important future development would be, once the clearing-house function has been established at Vienna, for regional institutes with a full connection to Internet to develop their own subsystems of UNCJIN. Obtaining a sufficient level of connection to Internet, however, can be expensive. The Crime Prevention and Criminal Justice Branch, because it is part of the United Nations system, has a relatively high level of connection to Internet at low cost. That is because large organizations such as the United Nations can absorb the rather high cost of high-level connection to Internet. Thus, it is more cost-effective to develop UNCJIN from Vienna. This process is taking place already with the generous assistance of the University of Vienna. The computer staff of the Institute of Applied Informatics of the University of Vienna, in cooperation with the coordinator of UNCJIN and the United Nations Office at Vienna, has been transferring parts of UNCJIN Gopher to Vienna from the School of Criminal Justice of the State University of New York at Albany and establishing in a graphic interface World Wide Web, which better visualizes information already available on UNCJIN Gopher. Ultimately, the graphic interface will allow for a better dissemination of texts, not only in English but also in other official languages of the United Nations.** Moreover, in an effort to further enhance UNCJIN, the National Institute of Justice of the United States Department of Justice, together with the private sector, is assisting the United Nations crime prevention and criminal justice programme in developing a computerized on-line crime and justice clearing-house. This clearing-house, the concept of which will be presented for a review at the workshop and the ancillary symposium, will also be the subject of a separate review by the Commission on Crime Prevention and Criminal Justice at its fourth session, to be held at Vienna from 30 May to 9 June 1995. Participants of the Ninth Congress are invited to offer comments on the present and future development of UNCJIN in the light of their experiences and expectations in the area of computerizing the collection and provision of crime and justice data and information.

B. Role of Governments, interregional and regional institutes and other entities

58. Regional and interregional institutes should give attention to providing UNCJIN with their newsletters, databases, reports and other publications in electronic form so that they may be placed on Internet. That is a service that the Branch can provide to the institutes. For their part, the institutes need to be careful to prepare their electronic files in a manner that makes it relatively easy to install them on Internet.

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*See also the report of the Secretary-General on progress made in the implementation of General Assembly resolutions 46/152, 47/91 and 48/103 (A/49/593, para. 79).

**The experimental World Wide Web site may be accessed using the following electronic address: http://www.ifs.univie.ac.at/~pr2gql/uno.

59. Member States can assist greatly in improving the flow of criminal justice information by working closely with the regional institutes, providing them with electronic information that they wish to have disseminated via Internet. Keeping up to date is much easier for end users than for providers because the level of connection to Internet that is required is not high and thus the cost is relatively low.

60. It costs nothing to join UNCJIN on Internet, so long as the user has a connection to Internet. And the cost of connecting to Internet continues to decline. In the United States, the cost of access to Internet has dropped to 12 United States dollars per month, including telecommunications charges. In other countries, the same service can be obtained from various commercial providers for the same price, but charges for telecommunications may be additional. Outside the United States, the cost of an electronic connection to any network depends largely on the local costs of telecommunications. The quality of the connection also depends on the quality of the telecommunications system. Large entities, such as national government departments and large universities, are almost always the first to obtain full connection to Internet. As a first step, therefore, it may be advisable to attempt to establish such a connection via universities and national government departments that have computing centres. It follows that United Nations regional and interregional institutes should take steps to establish cooperative working relationships with local universities and national government departments. Not only will it be possible to find effective and low-cost Internet connections, but it will also enhance the exchange of information between universities and regional institutes, and Governments.

C. Other implications

61. The time needed for maintenance of UNCJIN will increase in the future. The development of databases and gateways via Gopher to other databases must be constantly monitored. Since electronic addresses of databases and other Gopher systems are changing, and other Gopher systems are constantly changing the structure of their databases, the system operator who oversees UNCJIN must be constantly on the lookout for changes. As far as the UNCJIN-L bulletin-board is concerned, if the membership continues to increase rapidly, as it has the past two years, the amount of work needed to monitor the membership, to keep the flow of messages running smoothly, will also increase considerably. This is the most time-consuming aspect of UNCJIN, but also the most rewarding, as the above-mentioned examples demonstrate. There must be at least one staff person devoted to the development and maintenance of UNCJIN if its current high level of quality is to be kept up. Its quality and development, however, will also depend to a great extent on the ability of all United Nations interregional and regional institutes to contribute to the database, and to increase its membership further by sponsoring developing countries and encouraging national entities to provide information, as well as to become connected, to UNCJIN.

V. CONCLUSIONS AND RECOMMENDATIONS

A. Membership of the United Nations Crime and Justice Information Network

62. In the short time that UNCJIN has been in existence, massive changes have occurred in information technology. The global information society has emerged, bringing with it an explosion of criminal justice information.

63. Already many criminal justice professionals and scholars are exchanging significant and useful information via the UNCJIN bulletin-board, which provides an opportunity for the free exchange of information that is immediate, practical and relevant. While there has been a tenfold increase in membership in UNCJIN-L within five years, its members are predominantly in the United States. This is to be expected, since that is where Internet is most highly developed and where it all began. But it need not be that way. Many Member States have the facilities and knowledge to utilize Internet. They should encourage their

national government research, planning, legislative and criminal justice professionals to make regular use of UNCJIN on Internet. It is one effective way of keeping up to date on what is happening in criminal justice. It is also a resource that can be drawn on to solve practical, theoretical or policy-related problems.

B. Type and scope of information

64. Given its unique position in the United Nations system, the Crime Prevention and Criminal Justice Branch should continue to increase its efforts to store and disseminate not only its own data, but also data from other agencies, institutes and entities cooperating with the United Nations in the field of crime prevention and criminal justice. That could be done at little additional cost, especially if staff of the contributing entities were properly trained in the preparation of electronic documents for distribution on Internet.

65. In addition to storing and disseminating databases, the Branch should move towards fulfilling its other clearing-house function of providing a gateway to other databases and information around the world via the latest Internet software. Management and financial resources will be needed to carry out this task.

C. Use and provision of information

66. Member States can contribute to the blossoming of UNCJIN on Internet by, first of all, taking advantage of the services offered. The Branch and the institutes cooperating with the United Nations in the field of crime prevention and criminal justice have generated a vast amount of criminal justice information over the past 20 years, much of which has not been accessible. It could easily be made accessible on UNCJIN. What is more important, Member States should encourage national government departments, as well as non-governmental organizations, to make better use of the vast amount of information available, especially data from the United Nations surveys of crime trends and operations of criminal justice systems.

67. Secondly, Governments of Member States should support UNCJIN by providing databases and reports concerning their crime prevention programmes, special solutions to criminal justice problems, and newsletters on events and progress made in their countries. If Member States already have the facilities and high-level connections to Internet, they should establish their own Gopher system, making available their own array of national databases and information. In that way, the information will also become instantly available on UNCJIN Gopher.

68. Finally, Member States should make a greater effort to publicize their activities. News, events, meetings and conferences are all of great interest to members of UNCJIN-L - it is through notices on such subjects that members around the world gain an understanding of what issues are of concern in a particular country and are able to locate individuals who may be doing research on a problem that is relevant to one being faced in their own countries. Such information can only be obtained via an electronic bulletin-board. Using the electronic bulletin-board is also the most effective way to establish connections between criminal justice professionals and planners, especially those in government departments that are often insulated from the public and the rest of the world. It also offers a vehicle to improve interaction involving Governments and non-governmental organizations.

D. Assistance to developing countries

69. Assistance to developing countries is always a high priority. The Eighth Congress discussed the establishment of a comprehensive subsidy scheme in order to enable developing countries to participate in the electronic information exchange promoted by UNCJIN (A/CONF.144/14, paras. 57-66). Many developing countries have already obtained much of the technological equipment from which a great deal of information flows; however, those countries often do not have the educational infrastructure needed to cope with the

barrage of information that is being issued by the global information society. Educational and training seminars are, therefore, urgently needed for personnel in developing countries who have access to Internet. They need to be trained in how to establish connections with UNCJIN, how to develop search strategies to obtain the information that they want and how to evaluate the reliability and validity of that information.

Notes

[1]*Official Records of the Economic and Social Council, 1994, Supplement No. 11* (E/1994/31), chap. IV, para. 6.

[2]Ibid., chap. II, para. 8.

[3]Ibid., chap. VI, para. 4.

[4]P. S. Breivik, "Education for the information age", D. W. Farmer and T. F. Mech, eds., *New Directions for Higher Education*, No. 78, summer 1992.

[5]American Library Association Presidential Committee on Information Literacy, *Final Report* (Chicago, Illinois, American Library Association, 1989).

[6]*Time Magazine*, 25 July 1994.

[7]United Nations, *Treaty Series*, vol. 213, No. 2889.

[8]Raul Zambrano, "Sustainable Development Network: extending the links and their value", *Logon* No. 25, June 1994, p. 7; and Mutawakilu A. Tiamiyu, "Sub-Saharan Africa and the paperless society: a comment and a counterpoint", *Journal of the American Society for Information Science*, vol. 40, No. 5 (1989), pp. 325-328.

Annex

CONNECTING DEVELOPING COUNTRIES TO INTERNET

1. In many developing countries, telephone communications are in poor condition. The Governments of those countries, being aware of the fact that improvement of telephone communications is expensive and time-consuming, have pursued alternative projects involving satellite connections. For example, the Pan African News Agency, with the assistance of the United Nations Educational, Scientific and Cultural Organization (UNESCO), has put together a network linked by satellite that will allow bureaux in 13 African countries to have Internet linkage.* It is hoped that other United Nations organizations will provide the same kind of technical assistance. The ways to obtain connections to Internet in developing countries are described below, although the specific arrangements will depend on the exact location and the way in which the particular country's telecommunications system is administered.

2. All connections to Internet may be made in a number of different ways and at a number of different levels. Generally speaking, the connections available are as follows:

(a) A direct, full connection uses a local area network that provides Ethernet connection and capability and also provides the appropriate software and protocols. Most major universities throughout the world have such a connection, including those in developing countries where Internet is available. Such a connection allows for access to electronic mail, database retrieval and other special services of Internet such as Gopher and World Wide Web. Sometimes it is possible to obtain access to Internet via a university computing centre at relatively low cost, or on the basis of exchange of services;

(b) An indirect connection via a telephone line accesses a service provider such as Delphi, CompuServe or America On-line. These networks provide different levels of access to Internet. Delphi provides access to full services of Internet; CompuServe provides only electronic mail access. They charge relatively low rates: 15-20 United States dollars per month for unlimited on-line access, including telecommunications charges. The cost may be higher in countries other than the United States, however, because of the varying telecommunications costs. In some countries, especially where the Government has a monopoly on the telecommunications industry, the cost of telephone access to the network may be high. In many countries, however, some of the service providers are beginning to offer access fees that include lower telecommunications charges, and so prices are rapidly declining. Of the above providers, Delphi may be a relevant choice not only because of the outstanding Internet service it provides, but also because it has a full Spanish language network. Of particular importance as a service provider in developing countries is the network Association for Progressive Communication (APC) network, which has Internet nodes or access points throughout Africa, Asia, Central and South America, and central and eastern Europe;

(c) The use of locally linked computers with common networking software tends to be a loose arrangement, depending on the locality. Generally, there are two such "networks": FIDONET, which is popular in Africa, and UNIX to UNIX CoPy (UUCP),** which is popular in South America. These are generally informal arrangements that can nevertheless provide low-cost electronic mail connection to Internet. They are, however, difficult to set up for the novice and depend considerably on the existence of a local users' group for support and maintenance. They also depend entirely on the use of existing telephone lines and are usually available only on demand. Much of the access to the APC network in developing countries is through these informal arrangements.

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*Based on information published in the *New York Times* on 1 October 1994.

**For a detailed description and instructions on how to connect to Internet via UUCP, see James Gardener, *DOS User's Guide to the Internet* (Englewood Cliffs, New Jersey, Prentice-Hall, 1994).

3. The APC network of networks may be a suitable vehicle for obtaining access to Internet from developing countries. APC is a worldwide partnership of member networks dedicated to providing low-cost computer communications services for individuals and non-governmental organizations working for environmental sustainability, universal human rights and social and economic justice. APC enhances the effectiveness of local, indigenous organizations by encouraging expertise in computer networking. All APC members are independent organizations that retain full control of their network. Member networks pay a percentage of their income to the APC secretariat to diversify the growth of the Association.

4. APC was the primary provider of telecommunications for non-governmental organizations at the United Nations Conference on Environment and Development, held at Rio de Janeiro, Brazil, from 3 to 14 June 1992, at the World Conference on Human Rights, held at Vienna from 14 to 25 June 1993, and at the International Conference on Population and Development, held at Cairo from 5 to 13 September 1994. Plans are being made to provide similar services for the World Summit for Development, to be held at Copenhagen from 11 to 12 March 1995, and at the Fourth World Conference on Women: Action for Equality, Development and Peace, to be held at Beijing from 1 to 15 September 1995.

5. The APC network provides connections via FIDONET in the following countries in Africa: Algeria, Egypt, Ethiopia, Ghana, Kenya, Morocco, Senegal, South Africa, Tunisia, Uganda, United Republic of Tanzania, Zambia and Zimbabwe. Access is also possible via networks such as AlterNex, Chasque and EquaNex in South America, as well as UUCP and other networks. Access to eastern Europe and the newly independent States of the former Union of Soviet Socialist Republics is available through GlasNet. APC is accessible in over 150 countries throughout the world.

6. The major stumbling-block to developing countries in getting connected to Internet is inadequate telephone or telecommunications facilities. Service providers such as Sprint are working to improve the situation. As was the case with the UNESCO project involving the Pan African News Agency, there is now the possibility, provided there are the sufficient resources, to bypass the telephone line and to connect directly to the service providers via satellite telecommunications link. Some companies now offer this service, although in developing countries its availability is still limited and it is expensive. For the moment, worldwide access is best achieved using the networks listed below.

7. An additional advantage of using the APC network is that its system is designed to be quick and easy to use. Help is available in the step-by-step user manuals; there is also on-line and telephone help. Some APC members can provide assistance and training in the purchase, installation and use of equipment.

8. The cost varies from country to country, as does the level of access. Access fees to some of the networks are as follows (telephone fees may be higher):

Network	*Start-up fee*	*Monthly fee*	*Hourly fee*	*Free per month*
AlterNex*	US$ 20	US$ 10	US$ 5-10	1 hour
IGC*	US$ 15	US$ 10	US$ 3-10	1 hour
NordNet**	Skr 100	Skr 33	Skr 75	Equivalent of Skr 100 of usage
Pegasus***	$A 95	$A 20	$A 11-23	1 hour

*US$ = United States dollars.
**Skr = Swedish Kroner.
***$A = Australian dollars.

9. Other APC member networks charge similar fees: rates are purposely kept low. Fees are generally payable in local currency. Subscribing to any one of the member networks gives access to the others.

To be connected to the APC networks, a user needs the following:

(a) A personal computer;

(b) Access to an ordinary telephone line;

(c) Modem (to connect the computer to the telephone line);

(d) Any communications software;

(e) An account on any APC network.

10. To access UNCJIN on Internet via an APC network, the form below should be filled in and sent (by post, telefacsimile or electronic mail) to the appropriate member network in the following list:

AlterNex (for Brazil and other countries in South America)
IBASE
Rua Vicente de Souza 29
22251-070 Rio de Janiero
Brazil
Telephone: +55 (21) 286-0348
Telefacsimile: +55 (21) 286-0541
Electronic mail: suporte@ax.apc.org

Chasque (for Paraguay and Uruguay)
Casilla Correo 1539
Montevideo 11000
Uruguay
Telephone: +598 (2) 496-192
Telefacsimile: +598 (2) 419-222
Electronic mail: apoyo@chasque.apc.org

ComLink (for Austria, Croatia, Germany, Italy, Turkey and Yugoslavia)
Emil-Meyer-Str. 20
D-30165 Hannover
Germany
Electronic mail: support@oln.comlink.apc.org

Ecuanex (for Ecuador)
12 de Octubre 622, Of. 504
Casilla 17-12-566
Quito
Ecuador
Telephone: +593 (2) 528-716
Telefacsimile: +593 (2) 505-073
Electronic mail: intercom@ecuanex.apc.org

GlasNet (for the Russian Federation and other countries in the Commonwealth of Independent States)
ulitsa Sadovaya-Chernograizskaya
dom 4, Komnata 16, Third Floor
107078 Moscow
Russian Federation
Telephone: +7 (095) 207-0704
Electronic mail: support@glas.apc.org

GlasNet-Ukraine (GLUK) (for Ukraine)
14b Metrologicheskaya str.
Kiev, 252143
Ukraine
Telephone: +7 (044) 266 9481
Telefacsimile: +7 (044) 266 9475
Electronic mail: support@gluk.apc.org

GreenNet - Main Office (for the United Kingdom of Great Britain and Northern Ireland and other countries in Europe, as well as countries in Africa, Asia and the Middle East)
393-395 City Road
London EC1V 1NE
United Kingdom of Great Britain and Northern Ireland
Telephone: +44 (71) 713-1941
Telefacsimile: +44 (71) 833-1169
Electronic mail: support@gn.apc.org

GreenNet - Netherlands Office (for the Netherlands)
c/o Antenna
Box 1513
NL-6501 Nijmegen
Netherlands
Telephone: +31 (80) 235-372
Telefacsimile: +31 (80) 236-798
Electronic mail: support@antenna.nl

HISTRIA (for Slovenia)
Ziherlova 43 61
Ljubljana
Slovenia
Telephone: +38 (61) 211-553
Telefacsimile: +38 (61) 152-107
Electronic mail: support@histria.apc.org

IGC - EcoNet/PeaceNet/ConflictNet/LaborNet (for China, Japan and the United States of America)
18 De Boom Street
San Francisco, California 94107
United States of America
Telephone: +1 (415) 442-0220
Telefacsimile: +1 (415) 546-1794
Electronic mail: support@igc.apc.org

Laneta (for Mexico)
Tlalpan 1025, col. portales
Mexico City
Mexico
Telephone: +52 (5) 277-4791
Telefacsimile: +52 (5) 277-4791
Electronic mail: soporte@laneta.apc.org

Nicarao (for Nicaragua, Panama and other countries in Central America)
CRIES
Apartado 3516
Iglesia Carmen
1 cuadra al lago
Managua
Nicaragua
Telephone: +505 (2) 621 312
Telefacsimile: +505 (2) 621 244
Electronic mail: ayuda@nicarao.apc.org

NordNet (for the Nordic countries and the Baltic countries)
Huvudskaersvaegen 13, nb
S-12154 Johanneshov
Sweden
Telephone: +46 (8) 6000-331
Telefacsimile: +46 (8) 6000-443
Electronic mail: support@nn.apc.org

Pegasus (for Australia and other countries in South-East Asia and the Pacific islands)
P.O. Box 284
Broadway 4006
Queensland
Australia
Telephone: +61 (7) 257-1111
Telefacsimile: +61 (7) 257-1087
Electronic mail: support@peg.apc.org

SangoNet (for southern Africa)
13th floor Longsbank Building
187 Bree Street
Johannesburg 2000
South Africa
Telephone: +27 (11) 838-6944
Telefacsimile: +27 (11) 838-6310
Electronic mail: support@wn.apc.org

Wamani (for Argentina)
CCI
Talcahuano 325-3F
1013 Buenos Aires
Argentina
Telephone: +54 (1) 35 6842
Electronic mail: apoyo@wamani.apc.org

Web (for Canada and Cuba)
NirvCentre
401 Richmond Street West
Suite 104
Toronto, Ontario M5V 3A8
Canada
Telephone: +1 (416) 596-0212
Telefacsimile: +1 (416) 596-1374
Electronic mail: support@web.apc.org

Offices of the Association for Progressive Communication secretariat

APC International Secretariat
Rua Vincente de Souza 29
22251-070 Rio de Janeiro
Brazil
Telephone: +55 (21) 286-4467
Telefacsimile: +55 (21) 286-0541
Electronic mail: apcadmin@apc.org

APC North American Regional Office
18 De Boom Street
San Francisco, California 94107
United States of America
Telephone: +1 (415) 442-0220
Telefacsimile: +1 (415) 546-1794
Electronic mail: apcadmin@apc.org

Form to be forwarded to the appropriate member network

Network to be joined (see also the list above): _____

Preferred user name: _____
(2 or 3 letters and/or arabic numerals without punctuation, e.g. pwilson, or an acronym)

Name: _____

Organization: _____

Address: _____

_____

_____

Telephone: _____ Telefacsimile: _____

Major areas of interest: _____

_____

_____

☐ To be billed monthly (enclosed is a refundable deposit of US$ 50)
☐ Subscription to be charged to credit card

Name as it appears on credit card: _____

Account number/expiration date: _____

Signature: _____

☐ Address may be included in the on-line directory
☐ Phone number may be included in the on-line directory